United States
2022 Economic Census: Transportation

2022 Commodity Flow Survey

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**U.S. Department of Transportation
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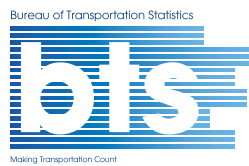**BUREAU OF TRANSPORTATION STATISTICS
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Making Transportation Count

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Acknowledgments

For additional information regarding data in this publication, visit <www.census.gov/programs-surveys/cfs.html>.

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Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

Every 5 years, for years ending in "2" and "7," the U.S. Census Bureau collects detailed statistics about businesses that are essential to understanding the American economy. This official count, better known as the "economic census," serves as the foundation for the measurement of businesses in the United States.

As part of the Census Bureau's mission to provide timely information on the health of the U.S. economy, this "business" census serves as the most extensive collection of data related to business activity. Business establishments, covering most industries and geographic areas of the United States and Island Areas, are surveyed according to their primary business activity.

Data produced from the economic census are based on the North American Industry Classification System (NAICS), and several key statistics are tabulated: number of establishments, number of employees, payroll, and measure of output (sales, value of shipments, or revenue).

LEGAL AUTHORITY AND CONFIDENTIALITY

The economic census is the U.S. government's official 5-year measure of American businesses and the economy. It is conducted by the U.S. Census Bureau, and response is required by law. Title 13, United States Code (U.S.C.), sections 131, 224, and 225 authorize the survey and require businesses and other organizations that receive this questionnaire to answer the questions and return the report to the Census Bureau. The law also specifies penalties for firms that fail to report.

In accordance with section 9 of the same law, the information that businesses and other organizations provide is confidential. Only people sworn to uphold the confidentiality of Census Bureau information may access the data, and it is designated to be used only for statistical purposes. Further, copies retained in respondents' files are immune from legal process.

COVERAGE

The economic census is an establishment-based survey and includes all establishments that:

- Are in operation for at least some part of the census year.
- Are located in one of the 50 states, the District of Columbia, one of the five Island Areas, or associated offshore areas.

- Have paid employees.
- Are classified in one of 19 in-scope sectors defined by NAICS.

CONTENT

The economic census collects core and industry-specific content to serve as key benchmarks to the economy at a point in time, i.e., every 5 years by industry and geography. The status of categories such as Operational Status; Primary Business or Activity; Sales, Shipments, Receipts, or Revenue; Employment and Payroll; and Products detail of Sales, Shipments, Receipts or Revenue are questions that are posed to all businesses. Other questions may include trade or industry-specific questions as well as special items that are trade specific or cross sector questions.

FREQUENCY

The economic census is conducted every 5 years, for years ending in "2" or "7."

DATA PRODUCTS

The key statistics produced for the economic census include Total Number of Establishments; Sales, Value of Shipments, or Revenue; Primary Business or Activity; Total Number of Employees; Payroll; and industry-specific statistics.

The data products include over 950 detailed industries across 19 industrial sectors classified using NAICS. Data produced from the economic census are available via the Census Bureau's interactive application data.census.gov at <https://data.census.gov/> or on the web via Economic Census by Year at <www.census.gov/programs-surveys/economic-census/year.html>. Refer to "Finding Economic Census Data Using Data Tools" at <www.census.gov/programs-surveys/economic-census/year/2022/guidance/finding-data.html> for more information.

USES

The economic census provides the most comprehensive measure of the U.S. economy, producing industry statistics at the national, state, and local levels. Its data products provide the foundation for other key measures of economic performance. This information is used by businesses, policymakers, local governments, communities, individuals, students, and researchers for economic development, business decisions, strategic

planning, and data reports. Additionally, federal agencies also rely on economic census data as input to a variety of economic products.

- The Bureau of Economic Analysis uses economic census data to prepare updates of the Gross National Product (GNP) and GNP weight deflators, the Gross Domestic Product (GDP), the National Income and Product Accounts (NIPAs), and the annual input-output (I/O) tables.

- The Bureau of Labor Statistics uses economic census data to calculate productivity series, update producer price indexes (PPI), and calculate weights when new components are added.

- The Federal Reserve Board uses economic census data to prepare the Index of Industrial Production.

- The Census Bureau uses the economic census to benchmark annual, quarterly, and monthly estimates and to construct their sampling frames.

- State and local agencies use economic census data for economic policymaking and forecasting.

- Consultants, trade associations, and chambers of commerce use economic census data to help their business clients and members measure key business facts they can use to gauge organizational structure and product trends.

- Individual businesses use the data from the economic census to make decisions about operating sites, capital investments, and product development.

CONTACT US

Our webpage at <www.census.gov/programs-surveys/economic-census/contact-us.html> contains contact information and other useful topics. For information about the economic census (United States), call us at 301-763-5154 (or toll-free at 1-800-242-2184) or email <ewd.outreach@census.gov>; for information about the Island Area economic census, call 301-763-3314.

Commodity Flow Survey Overview

The Commodity Flow Survey (CFS) is a joint effort by the Bureau of Transportation Statistics (BTS), U.S. Department of Transportation, and the U.S. Census Bureau. The survey is the primary source of national and subnational data on domestic freight shipments by establishments located in the 50 states and the District of Columbia, and is classified in the Mining, Manufacturing, Wholesale, and selected retail and services trade industries as defined by the 2017 North American Industry Classification System (NAICS).

The CFS is conducted every 5 years as part of the economic census. Data are provided on the type of commodity, origin, destination, value, weight, mode of transportation, and distance of shipments. It provides a modal picture of national freight flows and represents the only publicly available source of commodity flow data for all the major transportation modes. The CFS has been conducted in 1993, 1997, 2002, 2007, 2012, 2017, and 2022.

CFS data are used by policymakers and transportation professionals in various federal, state, and local agencies for assessing the demand for transportation facilities and services, energy use, safety risk, and environmental concerns. Additionally, business owners, researchers, and analysts use the CFS data for analyzing trends in the movement of goods, mapping spatial patterns of commodity and vehicle flows, forecasting demands for the movement of goods, and determining needs for associated infrastructure and equipment.

For additional information on the Commodity Flow Survey, refer to the Methodology section of the CFS website at <www.census.gov/programs-surveys/cfs.html>.

Geographic Area Series

Table A1a.

Shipment Characteristics by Mode of Transportation for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Mode of transportation	Value		Weight		Average distance (GCD) per shipment (2022 miles)[1]
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
All modes	**17,996,782**	**100.0**	**12,169,793**	**100.0**	**552**
Single modes	**14,709,588**	**81.7**	**11,031,128**	**90.6**	**235**
Truck[2]	13,222,965	73.5	8,293,501	68.1	220
For-hire truck	8,062,541	44.8	3,909,476	32.1	381
Company-owned truck	4,141,550	23.0	2,994,372	24.6	174
Customer pick-up[3]	1,018,874	5.7	1,389,653	11.4	139
Rail	568,541	3.2	1,456,515	12.0	614
Water	171,131	1.0	435,378	3.6	409
Inland water	71,205	0.4	232,571	1.9	262
Great Lakes	570	Z	47,058	0.4	227
Deep sea	99,355	0.6	155,749	1.3	641
Multiple waterways	S	S	S	S	S
Air (includes truck and air)	155,933	0.9	5,212	Z	1,254
Pipeline[4]	589,646	3.3	799,759	6.6	S
Other single modes[5]	1,372	Z	40,763	0.3	4
Multiple modes	**3,079,008**	**17.1**	**1,036,960**	**8.5**	**776**
Parcel, U.S. Postal Service, or courier . .	2,403,012	13.4	61,657	0.5	776
Truck and rail	587,664	3.3	841,574	6.9	747
Truck and water	80,368	0.4	96,037	0.8	865
Rail and water	5,809	Z	36,165	0.3	593
Other multiple modes[5]	2,154	Z	S	S	1,578
Unknown modes[6]	**208,186**	**1.2**	**101,705**	**0.8**	**471**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[3] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[4] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[5] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[6] "Unknown mode" represents a shipment reported as unknown mode or reported with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A1b.

Shipment Characteristics by Mode of Transportation for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Mode of transportation	Value			Weight			Average distance (GCD) per shipment[1]		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
All modes	**17,996,782**	**14,517,812**	**24.0**	**12,169,793**	**12,468,902**	**−2.4**	**552**	**679**	**−18.8**
Single modes..............	**14,709,588**	**11,737,969**	**25.3**	**11,031,128**	**11,604,764**	**−4.9**	**235**	**243**	**−3.1**
Truck[2].....................	13,222,965	10,398,910	27.2	8,293,501	8,843,334	−6.2	220	206	6.6
For-hire truck	8,062,541	6,968,184	N	3,909,476	5,232,034	N	381	369	N
Company-owned truck....	4,141,550	3,430,726	N	2,994,372	3,611,300	N	174	45	N
Customer pick-up[3].......	1,018,874	N	N	1,389,653	N	N	139	N	N
Rail......................	568,541	254,209	123.7	1,456,515	1,251,240	16.4	614	579	5.9
Water....................	171,131	243,855	−29.8	435,378	804,392	−45.9	409	259	57.8
Inland water	71,205	117,321	−39.3	232,571	471,854	−50.7	262	188	39.0
Great Lakes.............	570	614	−7.1	47,058	41,947	12.2	227	304	−25.2
Deep sea	99,355	120,651	−17.7	155,749	268,634	−42.0	641	359	78.7
Multiple waterways	S	5,268	S	S	21,958	S	S	525	S
Air (includes truck and air). .	155,933	496,637	−68.6	5,212	8,019	−35.0	1,254	1,403	−10.6
Pipeline[4]	589,646	344,357	71.2	799,759	697,778	14.6	S	S	S
Other single modes[5].......	1,372	2,095	−34.5	40,763	93,634	−56.5	4	1	141.4
Multiple modes	**3,079,008**	**2,777,749**	**10.8**	**1,036,960**	**770,504**	**34.6**	**776**	**953**	**−18.6**
Parcel, U.S. Postal Service, or courier	2,403,012	2,117,135	13.5	61,657	38,008	62.2	776	953	−18.6
Truck and rail	587,664	348,047	68.8	841,574	471,398	78.5	747	1,177	−36.5
Truck and water...........	80,368	251,439	−68.0	96,037	109,861	−12.6	865	784	10.4
Rail and water	5,809	43,638	−86.7	36,165	143,013	−74.7	593	1,075	−44.8
Other multiple modes[5]......	2,154	17,490	−87.7	S	8,224	S	1,578	1,425	10.7
Unknown modes[6]	**208,186**	**N**	**N**	**101,705**	**N**	**N**	**471**	**N**	**N**

N Not available or comparable.

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[3] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[4] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[5] "Other mode" (single and multimode) represents a shipment reported with a valid mode others other mode or reported with a transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[6] "Unknown mode" represents a shipment reported as unknown mode or reported with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A2a.
Shipment Characteristics by Distance Shipped for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Distance shipped[1]	Value		Weight	
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
Total...	**17,996,782**	**100.0**	**12,169,793**	**100.0**
Less than 50 miles...	6,000,715	33.3	6,861,767	56.4
50 to 99 miles..	1,736,225	9.6	1,331,412	10.9
100 to 249 miles	2,800,502	15.6	1,414,087	11.6
250 to 499 miles	2,320,549	12.9	1,042,555	8.6
500 to 749 miles	1,559,732	8.7	575,563	4.7
750 to 999 miles	1,078,447	6.0	336,047	2.8
1,000 to 1,499 miles	1,094,605	6.1	370,382	3.0
1,500 to 1,999 miles	779,244	4.3	148,942	1.2
2,000 miles or more	626,763	3.5	89,039	0.7

[1] Shipments are grouped into distance categories based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere over the surface of that sphere.
Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A2b.
Shipment Characteristics by Distance Shipped for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Distance shipped[1]	Value			Weight		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change
Total	**17,996,782**	**14,517,812**	**24.0**	**12,169,793**	**12,468,902**	**−2.4**
Less than 50 miles...............................	6,000,715	5,131,422	16.9	6,861,767	7,216,222	−4.9
50 to 99 miles....................................	1,736,225	1,425,635	21.8	1,331,412	1,281,601	3.9
100 to 249 miles..................................	2,800,502	2,215,380	26.4	1,414,087	1,422,529	−0.6
250 to 499 miles..................................	2,320,549	1,836,093	26.4	1,042,555	971,753	7.3
500 to 749 miles..................................	1,559,732	1,186,351	31.5	575,563	615,771	−6.5
750 to 999 miles..................................	1,078,447	828,211	30.2	336,047	416,467	−19.3
1,000 to 1,499 miles	1,094,605	837,891	30.6	370,382	391,096	−5.3
1,500 to 1,999 miles	779,244	572,278	36.2	148,942	97,096	53.4
2,000 miles or more..............................	626,763	484,552	29.3	89,039	56,366	58.0

[1] Shipments are grouped into distance categories based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere over the surface of that sphere.
Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A3a.

Shipment Characteristics by Shipment Weight for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Shipment weight	Value		Weight		Average distance (GCD) per shipment (2022 miles)[1]
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
Total	**17,996,782**	**100.0**	**12,169,793**	**100.0**	**552**
Less than 50 lbs..	3,134,329	17.4	82,056	0.7	584
50 to 99 lbs..	614,200	3.4	27,759	0.2	433
100 to 499 lbs.	1,537,732	8.5	124,956	1.0	296
500 to 749 lbs.	479,075	2.7	59,508	0.5	242
750 to 999 lbs.	329,225	1.8	48,904	0.4	220
1,000 to 9,999 lbs.	3,692,796	20.5	847,842	7.0	228
10,000 to 49,999 lbs..	5,387,269	29.9	4,635,208	38.1	190
50,000 to 99,999 lbs..	1,048,841	5.8	2,254,537	18.5	80
100,000 lbs. or more	1,773,315	9.9	4,089,023	33.6	384

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A3b.

Shipment Characteristics by Shipment Weight for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Shipment weight	Value			Weight			Average distance (GCD) per shipment[1]		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
Total	**17,996,782**	**14,517,812**	**24.0**	**12,169,793**	**12,468,902**	**−2.4**	**552**	**679**	**−18.8**
Less than 50 lbs..	3,134,329	2,434,530	28.7	82,056	41,489	97.8	584	785	−25.6
50 to 99 lbs..	614,200	541,127	13.5	27,759	24,051	15.4	433	345	25.5
100 to 499 lbs.	1,537,732	1,353,537	13.6	124,956	124,023	0.8	296	254	16.7
500 to 749 lbs.	479,075	392,893	21.9	59,508	60,745	−2.0	242	203	19.2
750 to 999 lbs.	329,225	278,578	18.2	48,904	53,858	−9.2	220	193	14.0
1,000 to 9,999 lbs.	3,692,796	2,974,218	24.2	847,842	840,108	0.9	228	206	11.0
10,000 to 49,999 lbs.. . .	5,387,269	4,549,603	18.4	4,635,208	5,058,162	−8.4	190	199	−4.2
50,000 to 99,999 lbs.. . .	1,048,841	884,477	18.6	2,254,537	2,854,883	−21.0	80	89	−10.1
100,000 lbs. or more . .	1,773,315	1,108,850	59.9	4,089,023	3,411,583	19.9	384	654	−41.4

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A4a.
Shipment Characteristics by Two-Digit Commodity for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (2022 miles)[1]
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
	All commodities[2]..................................	**17,996,782**	**100.0**	**12,169,793**	**100.0**	**552**
01	Live animals and live fish	6,166	Z	2,355	Z	593
02	Cereal grains (includes seed)	132,673	0.7	491,143	4.0	221
03	Agricultural products (excludes animal feed, cereal grains, and forage products).........................	269,344	1.5	260,318	2.1	316
04	Animal feed, eggs, honey, and other products of animal origin	179,828	1.0	335,604	2.8	646
05	Meat, poultry, fish, seafood, and their preparations.....	507,218	2.8	120,033	1.0	590
06	Milled grain products and preparations and bakery products	169,334	0.9	105,694	0.9	164
07	Other prepared foodstuffs and fats and oils	796,922	4.4	629,379	5.2	367
08	Alcoholic beverages, and denatured alcohol...........	279,144	1.6	129,330	1.1	193
09	Tobacco products	90,931	0.5	4,865	Z	859
10	Monumental or building stone	7,751	Z	9,152	0.1	273
11	Natural sands	7,475	Z	455,064	3.7	66
12	Gravel and crushed stone (excludes dolomite and slate)...	29,903	0.2	1,910,896	15.7	33
13	Other nonmetallic minerals, not elsewhere classified....	17,056	0.1	102,024	0.8	311
14	Metallic ores and concentrates......................	32,315	0.2	55,205	0.5	217
15	Coal..	31,883	0.2	560,513	4.6	64
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)	893,816	5.0	1,036,594	8.5	40
18	Fuel oils (includes diesel, Bunker C, and biodiesel)	608,250	3.4	672,918	5.5	29
19	Other coal and petroleum products, not elsewhere classified..	435,905	2.4	869,758	7.1	161
20	Basic chemicals	336,097	1.9	489,838	4.0	308
21	Pharmaceutical products	1,459,851	8.1	33,355	0.3	468
22	Fertilizers..	79,908	0.4	131,077	1.1	193
23	Chemical products and preparations, not elsewhere classified..	488,024	2.7	154,404	1.3	545
24	Plastics and rubber	769,854	4.3	239,647	2.0	514
25	Logs and other wood in the rough....................	3,266	Z	11,881	0.1	269
26	Wood products	372,456	2.1	314,964	2.6	339
27	Pulp, newsprint, paper, and paperboard	109,247	0.6	110,084	0.9	270
28	Paper or paperboard articles	191,726	1.1	106,490	0.9	351
29	Printed products	139,074	0.8	27,229	0.2	542
30	Textiles, leather, and articles of textiles or leather	685,176	3.8	46,768	0.4	762
31	Nonmetallic mineral products........................	257,517	1.4	1,192,041	9.8	648
32	Base metal in primary or semifinished forms and in finished basic shapes	615,015	3.4	291,657	2.4	366
33	Articles of base metal...............................	461,276	2.6	100,469	0.8	602
34	Machinery	954,822	5.3	90,140	0.7	445
35	Electronic and other electrical equipment and components and office equipment...................	1,614,494	9.0	98,859	0.8	608
36	Motorized and other vehicles (including parts).........	1,466,316	8.1	199,331	1.6	472
37	Transportation equipment, not elsewhere classified.....	297,085	1.7	10,032	0.1	784
38	Precision instruments and apparatus	452,506	2.5	13,219	0.1	637
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	219,079	1.2	30,718	0.3	767
40	Miscellaneous manufactured products	702,501	3.9	114,688	0.9	643
41	Waste and scrap....................................	97,169	0.5	178,125	1.5	171
43	Mixed freight.......................................	1,728,410	9.6	433,933	3.6	327

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A4b.
Shipment Characteristics by Two-Digit Commodity for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value			Weight			Average distance (GCD) per shipment[1]		
		2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
	All commodities[2]	**17,996,782**	**14,517,812**	**24.0**	**12,169,793**	**12,468,902**	**−2.4**	**552**	**679**	**−18.8**
01	Live animals and live fish	6,166	10,777	−42.8	2,355	4,573	−48.5	593	866	−31.5
02	Cereal grains (includes seed)	132,673	108,561	22.2	491,143	707,113	−30.5	221	158	40.0
03	Agricultural products (excludes animal feed, cereal grains, and forage products)	269,344	236,965	13.7	260,318	315,168	−17.4	316	524	−39.8
04	Animal feed, eggs, honey, and other products of animal origin..	179,828	134,423	33.8	335,604	325,312	3.2	646	514	25.8
05	Meat, poultry, fish, seafood, and their preparations	507,218	356,421	42.3	120,033	93,872	27.9	590	183	222.3
06	Milled grain products and preparations and bakery products...	169,334	198,051	−14.5	105,694	132,818	−20.4	164	187	−12.4
07	Other prepared foodstuffs and fats and oils	796,922	606,280	31.4	629,379	530,168	18.7	367	373	−1.6
08	Alcoholic beverages, and denatured alcohol	279,144	226,894	23.0	129,330	111,861	15.6	193	195	−1.2
09	Tobacco products.......................................	90,931	79,806	13.9	4,865	4,659	4.4	859	1,014	−15.2
10	Monumental or building stone	7,751	7,193	7.8	9,152	14,072	−35.0	273	345	−21.0
11	Natural sands..	7,475	12,211	−38.8	455,064	535,935	−15.1	66	170	−61.0
12	Gravel and crushed stone (excludes dolomite and slate)...	29,903	19,664	52.1	1,910,896	1,615,187	18.3	33	41	−18.0
13	Other nonmetallic minerals, not elsewhere classified......	17,056	24,581	−30.6	102,024	216,583	−52.9	311	274	13.6
14	Metallic ores and concentrates	32,315	30,734	5.1	55,205	70,510	−21.7	217	607	−64.3
15	Coal	31,883	31,673	0.7	560,513	878,235	−36.2	64	74	−12.8
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)	893,816	745,954	19.8	1,036,594	1,388,364	−25.3	40	44	−9.2
18	Fuel oils (includes diesel, Bunker C, and biodiesel)........	608,250	474,617	28.2	672,918	909,140	−26.0	29	36	−20.6
19	Other coal and petroleum products, not elsewhere classified	435,905	258,447	68.7	869,758	547,120	59.0	161	65	149.2
20	Basic chemicals..	336,097	290,944	15.5	489,838	418,746	17.0	308	421	−26.8
21	Pharmaceutical products	1,459,851	1,099,027	32.8	33,355	19,569	70.4	468	623	−24.8
22	Fertilizers	79,908	57,886	38.0	131,077	172,509	−24.0	193	102	88.4
23	Chemical products and preparations, not elsewhere classified	488,024	431,214	13.2	154,404	127,478	21.1	545	881	−38.1
24	Plastics and rubber	769,854	642,524	19.8	239,647	224,812	6.6	514	689	−25.4
25	Logs and other wood in the rough......................	3,266	6,508	−49.8	11,881	25,637	−53.7	269	138	95.4
26	Wood products...	372,456	220,916	68.6	314,964	322,769	−2.4	339	350	−3.0
27	Pulp, newsprint, paper, and paperboard	109,247	127,501	−14.3	110,084	139,603	−21.1	270	267	1.3
28	Paper or paperboard articles............................	191,726	148,420	29.2	106,490	80,854	31.7	351	577	−39.1
29	Printed products.......................................	139,074	133,862	3.9	27,229	27,940	−2.5	542	480	12.9
30	Textiles, leather, and articles of textiles or leather	685,176	510,486	34.2	46,768	39,813	17.5	762	1,083	−29.7
31	Nonmetallic mineral products...........................	257,517	203,609	26.5	1,192,041	920,764	29.5	648	544	19.1
32	Base metal in primary or semifinished forms and in finished basic shapes	615,015	464,454	32.4	291,657	332,177	−12.2	366	413	−11.3
33	Articles of base metal	461,276	394,331	17.0	100,469	128,364	−21.7	602	559	7.6
34	Machinery...	954,822	870,494	9.7	90,140	94,760	−4.9	445	439	1.4
35	Electronic and other electrical equipment and components and office equipment	1,614,494	1,135,570	42.2	98,859	56,855	73.9	608	783	−22.4
36	Motorized and other vehicles (including parts)	1,466,316	1,244,898	17.8	199,331	170,451	16.9	472	475	−0.6
37	Transportation equipment, not elsewhere classified.......	297,085	281,929	5.4	10,032	6,515	54.0	784	918	−14.5

Footnotes available at end of table.

Shipment Characteristics by Two-Digit Commodity for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value			Weight			Average distance (GCD) per shipment[1]		
		2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
38	Precision instruments and apparatus	452,506	384,066	17.8	13,219	7,753	70.5	637	910	−29.9
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	219,079	179,022	22.4	30,718	26,989	13.8	767	822	−6.8
40	Miscellaneous manufactured products	702,501	607,982	15.5	114,688	81,807	40.2	643	1,063	−39.5
41	Waste and scrap	97,169	71,137	36.6	178,125	235,833	−24.5	171	157	9.2
43	Mixed freight	1,728,410	1,447,781	19.4	433,933	406,212	6.8	327	383	−14.7

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A5.

Shipment Characteristics by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (2022 miles)[1]
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
	All commodities[2].	**17,996,782**	**100.0**	**12,169,793**	**100.0**	**552**
010	Live animals and live fish.	6,166	Z	2,355	Z	593
021	Wheat.	27,653	0.2	85,859	0.7	358
022	Corn, except sweet	93,688	0.5	376,699	3.1	123
029	Other cereal grains	11,332	0.1	28,585	0.2	446
031	Fresh or chilled potatoes, except sweet	12,439	0.1	13,574	0.1	99
032	Fresh or chilled edible vegetables (except potatoes), and dried vegetables	71,748	0.4	43,202	0.4	75
033	Fruit and nuts, edible, fresh, chilled, or dried.	57,763	0.3	21,308	0.2	268
034	Soy beans	83,754	0.5	156,663	1.3	72
035	Oil seeds and nuts, except olives and soy beans.	6,212	Z	9,552	0.1	382
036	Bulbs, live plants, and seeds for sowing, not elsewhere classified.	20,305	0.1	8,228	0.1	919
039	Fresh-cut flowers, plants, and parts of plants, and other agricultural products	17,122	0.1	7,792	0.1	836
041	Eggs, cereal straw or husks, forage products, residues and waste from the food industries used in animal feeding, other products of animal origin, not elsewhere classified.	53,997	0.3	154,834	1.3	197
042	Animal feed preparations	125,831	0.7	180,770	1.5	706
051	Meat and poultry, fresh, chilled, or frozen, meat in brine, dried or smoked	456,530	2.5	114,928	0.9	654
052	Fish (except live), seafood, and their preparations.	50,509	0.3	5,070	Z	142
053	Preparations, extracts, and juices of meat, fish, or seafood	S	S	S	S	S
061	Wheat flour, groats, and meal	14,118	0.1	22,497	0.2	97
062	Malt, milled rice and corn (broken, flour, groats, and meal, inulin, wheat gluten, milled cereals and other vegetables and grains)	24,223	0.1	37,070	0.3	199
063	Bakery products and food preparations of cereals, flour, starch or milk. .	46,688	0.3	20,568	0.2	107
064	Bakery products, including frozen	84,305	0.5	25,558	0.2	185
071	Dairy products except beverages and preparations of milk	231,952	1.3	99,824	0.8	115
072	Processed or prepared vegetables, fruit, or nuts, except dried or milled, and juices	95,846	0.5	52,765	0.4	163
073	Coffee, tea, and spices, except unprocessed coffee and unfermented tea.	40,190	0.2	7,940	0.1	794
074	Animal or vegetable fats, oils, waxes, and their cleavage products, prepared edible fats, and flours and meals of oil seeds (excludes oils and fats for use as biodiesel).	88,727	0.5	88,060	0.7	679
075	Sugars confectionery, solid or syrups not containing added flavoring or coloring	26,763	0.1	50,089	0.4	175
076	Confectionery, cocoa, and cocoa preparations	36,732	0.2	7,149	0.1	870
077	Edible preparations, not elsewhere classified, and vinegar	109,915	0.6	37,045	0.3	344
078	Nonalcoholic beverages, not elsewhere classified, and ice	166,797	0.9	286,506	2.4	119
081	Malt beer	137,685	0.8	86,368	0.7	38
082	Wine and other fermented beverages	60,710	0.3	16,336	0.1	466
083	Spirituous beverages and undenatured ethyl alcohol	73,888	0.4	19,269	0.2	91
084	Denatured ethyl alcohol, not for ingestion or use as biofuel	6,860	Z	7,357	0.1	303
090	Tobacco products	90,931	0.5	4,865	Z	859
100	Monumental or building stone, except dolomite.	7,751	Z	9,152	0.1	273
110	Natural sands, except metal-bearing	7,475	Z	455,064	3.7	66
120	Gravel and crushed stone, except dolomite and slate	29,903	0.2	1,910,896	15.7	33
131	Salt	8,672	Z	49,778	0.4	242
132	Natural calcium phosphates, natural aluminum-calcium phosphates, and phosphatic chalks.	S	S	S	S	501
133	Dolomite, including monumental, building, and crushed	173	Z	13,300	0.1	29
139	Other nonmetallic minerals, not elsewhere classified	8,088	Z	38,315	0.3	555
141	Iron ores and concentrates	5,354	Z	45,697	0.4	323
149	Metallic ores and concentrates, except iron	26,961	0.1	9,508	0.1	215
151	Nonagglomerated bituminous coal	30,749	0.2	510,988	4.2	55
159	Coal, except nonagglomerated bituminous coal.	1,134	Z	49,526	0.4	253
171	Gasoline, and blends of gasoline and 10 percent ethanol.	746,641	4.1	857,164	7.0	26
172	Aviation turbine fuel (types a and b), and kerosene.	89,032	0.5	100,650	0.8	36

Footnotes available at end of table.

Shipment Characteristics by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (2022 miles)[1]
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
175	Ethanol, ethanol blends of more than 10 percent ethanol, and other fuel alcohols...	1,103	Z	1,582	Z	254
176	Ethanol, for use as biofuels..	57,040	0.3	77,197	0.6	126
181	Fuel oils	526,570	2.9	575,738	4.7	28
182	Blends of fuel oils and biofuel, biodiesel	81,680	0.5	97,180	0.8	30
191	Lubricating oils and greases	213,653	1.2	284,044	2.3	223
192	Refined petroleum oils and oils obtained from bituminous minerals, not elsewhere classified	53,359	0.3	84,648	0.7	210
193	Gaseous hydrocarbons	103,677	0.6	173,984	1.4	36
199	Other products of petroleum refining, and coal products, not elsewhere classified	65,217	0.4	327,082	2.7	46
201	Sodium hydroxide (caustic soda) and potassium hydroxide (caustic potash)	12,900	0.1	27,688	0.2	274
202	Inorganic chemicals, not elsewhere classified	108,658	0.6	252,284	2.1	210
203	Cyclic hydrocarbons	24,174	0.1	58,367	0.5	70
204	Phenols, phenol-alcohols, aldehydes, cyclic polymers of aldehydes, and acyclic alcohols, and organic acids	22,377	0.1	18,390	0.2	372
205	Organic chemicals, not elsewhere classified	167,987	0.9	133,109	1.1	574
210	Pharmaceutical products..	1,459,851	8.1	33,355	0.3	468
220	Fertilizers and fertilizer materials	79,908	0.4	131,077	1.1	193
231	Paints and varnishes, enamels, tanning or dyeing extracts, tannins and their derivatives, inks, lakes, toners, and ink	62,997	0.4	16,259	0.1	495
232	Essential oils and resinoids, and perfumery, cosmetic, or toilet preparations...	154,281	0.9	9,569	0.1	556
233	Soap, organic surface-active agents, cleaning preparations, polishes and creams, and scouring preps....................................	78,588	0.4	35,418	0.3	500
234	Photographic film, plates, paper, paperboard, or textiles, and chemical preps for photographic use	5,458	Z	637	Z	438
235	Insecticides, rodenticides, fungicides, herbicides, disinfectants, etc.....	77,948	0.4	24,608	0.2	348
239	Other chemical products and preparations: glues, prepared explosives, activated natural mineral products, anti-knock preparations, etc.	108,753	0.6	67,913	0.6	603
241	Plastics and rubber in primary forms or sheets........................	157,151	0.9	98,423	0.8	441
242	Manmade fibers and plastics basic shapes and articles.................	454,504	2.5	114,437	0.9	546
243	Rubber articles...	158,200	0.9	26,786	0.2	426
250	Logs and other wood in the rough	3,266	Z	11,881	0.1	269
261	Wood chips or particles...	4,270	Z	44,799	0.4	187
262	Lumber, wood continuously shaped along any of its edges or faces, shingles and shakes	170,629	0.9	157,253	1.3	194
263	Veneer sheets and sheets for plywood, particle board, fiberboard, plywood, and similar laminated wood	62,822	0.3	54,646	0.4	239
264	Windows, doors, thresholds, and builders' joinery and carpentry of wood, except shingles and shakes...................................	97,605	0.5	19,109	0.2	376
269	Other wood products..	37,129	0.2	39,158	0.3	592
271	Pulp of fibrous cellulosic materials	8,216	Z	11,739	0.1	972
272	Newsprint in large rolls or sheets	387	Z	555	Z	139
273	Uncoated paper, tissue, and paperboard in large rolls or sheets	54,182	0.3	52,060	0.4	232
274	Coated, impregnated, treated, or worked paper and paperboard, in large rolls or sheets	46,462	0.3	45,729	0.4	379
280	Paper or paperboard articles	191,726	1.1	106,490	0.9	351
291	Printed books, brochures, leaflets, and similar printed products	82,070	0.5	17,426	0.1	590
292	Newspapers, journals, and periodicals	10,086	0.1	1,568	Z	S
293	Advertising material, commercial or trade catalogues, and similar printed products...	11,216	0.1	4,247	Z	797
299	Other printed products	35,703	0.2	3,988	Z	617
301	Textile fibers, yarns, and broad woven or knitted fabrics	19,022	0.1	3,216	Z	953
302	Textile clothing and accessories, and headgear, except safety	414,225	2.3	21,543	0.2	868
303	Textiles and textile articles, not elsewhere classified	142,664	0.8	16,714	0.1	476
304	Leather footwear...	91,109	0.5	4,418	Z	642
305	Leather and articles of leather or allied materials, and dressed fur skins..	18,156	0.1	877	Z	610
311	Hydraulic cements..	8,584	Z	71,310	0.6	762

Footnotes available at end of table.

Table A5.
Shipment Characteristics by Three-Digit Commodity for the United States: 2022—Con.
(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (2022 miles)[1]
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
312	Ceramic products	29,677	0.2	19,770	0.2	949
313	Glass and glass products..	52,579	0.3	37,653	0.3	725
319	Other nonmetallic mineral products..................................	166,676	0.9	1,063,308	8.7	410
321	Ferro-alloys, and iron and steel in primary or semi-finished forms, or in powders or granules	22,058	0.1	9,393	0.1	648
322	Flat-rolled products of iron or steel	247,246	1.4	157,100	1.3	218
323	Bars, rods, angles, shapes, sections, and wire, of iron or steel	183,317	1.0	90,798	0.7	391
324	Nonferrous metal, except precious, unwrought, or in finished basic shapes, or in powders or granules	162,393	0.9	34,366	0.3	442
331	Pipes, tubes, and fittings...	114,173	0.6	35,710	0.3	291
332	Structures and parts, except prefabricated buildings	93,534	0.5	22,157	0.2	501
333	Hand tools, cutlery, except of precious metals, interchangeable tools for hand or machine tools,hardware, and industrial fasteners	186,565	1.0	27,970	0.2	653
339	Other articles of metal	67,005	0.4	14,632	0.1	607
341	Internal-combustion engines and parts...............................	97,570	0.5	9,582	0.1	420
342	Turbines, boilers, nuclear reactors, and nonelectric engines and motors, except internal combustion	27,487	0.2	787	Z	561
343	Pumps, compressors, fans, and ventilating or recycling hoods incorporating a fan..	96,445	0.5	8,428	0.1	548
344	Air-conditioning, refrigerating, or freezing equipment	117,351	0.7	11,826	0.1	242
345	Materials-handling, excavating, boring, and related machinery and equipment	138,975	0.8	24,199	0.2	284
349	Other mechanical machinery, not elsewhere classified	476,994	2.7	35,318	0.3	481
351	Electric motors, generators, rotary or static converters, and transformers..	62,674	0.3	4,886	Z	736
352	Electric cooking appliances, electro-thermic, or electro-mechanical domestic appliances	56,214	0.3	4,961	Z	679
353	Line telephone or telegraph apparatus	13,704	0.1	112	Z	858
354	Electronic entertainment products, except parts	191,510	1.1	14,911	0.1	822
355	Computer and electronic office equipment	293,305	1.6	4,992	Z	484
356	Prepared unrecorded or prerecorded media	8,189	Z	686	Z	882
357	Transmission, and reception apparatus for radio, television, radar, and remote-control	58,967	0.3	473	Z	357
358	Electronic components and parts....................................	141,183	0.8	5,310	Z	935
359	Other electronic and electrical equipment, not elsewhere classified.....	788,747	4.4	62,528	0.5	545
361	Motorized vehicles for transport of less than 10 people, except motorcycles, armored, and recreational................................	363,034	2.0	21,063	0.2	746
362	Motor vehicles for the transport of goods, and road tractors for semi-trailers	13,827	0.1	1,118	Z	610
363	Other vehicles	125,968	0.7	15,422	0.1	526
364	Motor vehicles parts and accessories except motorcycles and armored fighting vehicles	963,487	5.4	161,727	1.3	470
371	Railway equipment including locomotives and rolling stock, railway track fixtures and fittings, and parts	8,696	Z	3,008	Z	660
372	Aircraft and spacecraft...	260,507	1.4	6,125	0.1	784
373	Ships, boats, and floating structures	27,881	0.2	899	Z	850
381	Optical elements, instruments, and apparatus, except photographic and cinematographic...	36,226	0.2	S	S	972
382	Photographic and photocopying machines	14,435	0.1	S	S	546
383	Surveying, hydrographic, oceanographic, hydrological, meteorological, and geophysical instruments and appliances	3,916	Z	37	Z	799
384	Instruments, apparatus, and appliances for medical, surgical, dental, veterinary, or similar purposes	276,772	1.5	7,601	0.1	553
385	Meters and other instruments and apparatus for measuring or process control..	121,156	0.7	2,624	Z	861
390	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs...	219,079	1.2	30,718	0.3	767
401	Arms and ammunition	22,138	0.1	703	Z	848
402	Toys, games, and sporting equipment................................	189,182	1.1	12,852	0.1	707
409	Miscellaneous manufactured products	491,181	2.7	101,133	0.8	578

Footnotes available at end of table.

Table A5.
Shipment Characteristics by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (2022 miles)[1]
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
411	Metallic waste and scrap	87,910	0.5	133,313	1.1	172
412	Nonmetallic waste and scrap, except from food processing	9,259	0.1	44,812	0.4	167
439	Mixed freight.	1,728,410	9.6	433,933	3.6	327

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A6a.
Shipment Characteristics by NAICS[1] for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

NAICS code	NAICS description	Value (in millions of dollars)	Weight (in thousands of tons)	Average distance (GCD) per shipment (2022 miles)[2]
	Total.	**17,996,782**	**12,169,793**	**552**
212	Mining (except oil and gas).	100,456	2,523,861	48
31-33	Manufacturing	7,073,495	4,949,955	666
311	Food manufacturing.	1,033,547	614,172	421
312	Beverage and tobacco product manufacturing	176,681	255,032	330
313	Textile mills	28,107	5,431	690
314	Textile product mills	26,049	3,960	725
315	Apparel manufacturing	11,006	1,008	1,019
316	Leather and allied product manufacturing	5,185	540	1,037
321	Wood product manufacturing	173,941	204,791	310
322	Paper manufacturing	219,146	177,114	439
323	Printing and related support activities	95,438	21,097	636
324	Petroleum and coal products manufacturing	880,293	1,571,869	145
325	Chemical manufacturing	894,085	776,117	852
326	Plastics and rubber products manufacturing	303,597	72,145	641
327	Nonmetallic mineral product manufacturing.	162,299	748,757	250
331	Primary metal manufacturing.	331,679	164,345	493
332	Fabricated metal product manufacturing	474,256	118,068	659
333	Machinery manufacturing	450,078	41,650	746
334	Computer and electronic product manufacturing	366,249	13,197	1,008
335	Electrical equipment, appliance, and component manufacturing	174,999	20,501	948
336	Transportation equipment manufacturing.	1,008,184	113,203	666
337	Furniture and related product manufacturing.	90,432	16,942	574
339	Miscellaneous manufacturing	168,245	10,016	862
42	Wholesale trade	8,094,350	4,115,279	438
423	Merchant wholesalers, durable goods	3,741,311	1,309,073	499
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers. .	605,868	87,685	402
4232	Furniture and home furnishing merchant wholesalers	117,565	31,355	850
4233	Lumber and other construction materials merchant wholesalers.	287,833	658,529	206
4234	Professional and commercial equipment and supplies merchant wholesalers.	610,832	27,532	595
4235	Metal and mineral (except petroleum) merchant wholesalers.	238,675	111,398	200
4236	Household appliances and electrical and electronic goods merchant wholesalers.	679,748	50,499	527
4237	Hardware, and plumbing and heating equipment and supplies merchant wholesalers.	261,883	31,919	316
4238	Machinery, equipment, and supplies merchant wholesalers	618,774	95,714	395
4239	Miscellaneous durable goods merchant wholesalers.	320,132	214,442	880
424	Merchant wholesalers, nondurable goods.	4,353,039	2,806,206	333
4241	Paper and paper product merchant wholesalers	136,620	43,146	274
4242	Drugs and druggists' sundries merchant wholesalers.	1,087,103	43,310	557
4243	Apparel, piece goods, and notions merchant wholesalers.	144,965	8,080	925
4244	Grocery and related product merchant wholesalers	988,482	351,439	103
4245	Farm product raw material merchant wholesalers.	263,363	661,787	220
4246	Chemical and allied products merchant wholesalers.	203,629	228,101	237
4247	Petroleum and petroleum products merchant wholesalers	967,562	1,179,123	107
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers.	175,376	64,738	52
4249	Miscellaneous nondurable goods merchant wholesalers	385,939	226,483	453
4541	Electronic shopping and mail-order houses	1,007,872	52,222	645
45431	Fuel dealers	43,286	46,044	19
4931[3]	Warehousing and storage.	1,347,716	305,651	368
5111	Newspaper, periodical, book, and directory publishers	16,389	1,931	S
551114	Corporate, subsidiary, and regional managing offices	313,218	174,849	581

S Withheld because estimate did not meet publication standards.
[1] NAICS codes shown are those covered in the Commodity Flow Survey. NAICS is the North American Industry Classification System.
[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.
[3] For tabulation and publication purposes, NAICS 484 is grouped with NAICS 4931.
Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A6b.
Shipment Characteristics by NAICS[1] for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

NAICS code	NAICS description	Value			Weight			Average distance (GCD) per shipment[2]		
		2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
	Total.	17,996,782	14,517,812	24.0	12,169,793	12,468,902	−2.4	552	679	−18.8
212	Mining (except oil and gas).	100,456	92,648	8.4	2,523,861	2,897,512	−12.9	48	69	−30.0
31-33	Manufacturing	7,073,495	5,702,543	24.0	4,949,955	4,707,859	5.1	666	715	−6.9
311	Food manufacturing.	1,033,547	797,465	29.6	614,172	626,153	−1.9	421	288	46.2
312	Beverage and tobacco product manufacturing.	176,681	160,044	10.4	255,032	156,859	62.6	330	367	−10.1
313	Textile mills.	28,107	29,575	−5.0	5,431	6,415	−15.3	690	727	−5.2
314	Textile product mills	26,049	25,695	1.4	3,960	5,251	−24.6	725	922	−21.4
315	Apparel manufacturing	11,006	14,043	−21.6	1,008	475	112.2	1,019	1,071	−4.9
316	Leather and allied product manufacturing.	5,185	5,040	2.9	540	674	−20.0	1,037	1,181	−12.2
321	Wood product manufacturing	173,941	111,812	55.6	204,791	225,505	−9.2	310	433	−28.5
322	Paper manufacturing	219,146	191,972	14.2	177,114	163,164	8.5	439	530	−17.1
323	Printing and related support activities	95,438	85,771	11.3	21,097	20,273	4.1	636	749	−15.1
324	Petroleum and coal products manufacturing.	880,293	552,392	59.4	1,571,869	1,377,825	14.1	145	169	−14.0
325	Chemical manufacturing.	894,085	745,166	20.0	776,117	714,419	8.6	852	835	2.0
326	Plastics and rubber products manufacturing.	303,597	241,059	25.9	72,145	65,814	9.6	641	735	−12.7
327	Nonmetallic mineral product manufacturing.	162,299	129,607	25.2	748,757	855,925	−12.5	250	220	14.0
331	Primary metal manufacturing	331,679	227,183	46.0	164,345	175,072	−6.1	493	614	−19.6
332	Fabricated metal product manufacturing.	474,256	354,349	33.8	118,068	113,998	3.6	659	623	5.8
333	Machinery manufacturing.	450,078	375,493	19.9	41,650	42,290	−1.5	746	841	−11.3
334	Computer and electronic product manufacturing	366,249	321,741	13.8	13,197	5,365	146.0	1,008	1,256	−19.8
335	Electrical equipment, appliance, and component manufacturing.	174,999	129,471	35.2	20,501	16,409	24.9	948	1,051	−9.8
336	Transportation equipment manufacturing	1,008,184	961,036	4.9	113,203	113,202	0.0	666	719	−7.3
337	Furniture and related product manufacturing.	90,432	77,209	17.1	16,942	15,174	11.7	574	722	−20.5
339	Miscellaneous manufacturing	168,245	166,420	1.1	10,016	7,597	31.8	862	1,000	−13.8
42	Wholesale trade.	8,094,350	6,793,885	19.1	4,115,279	4,435,153	−7.2	438	419	4.5
423	Merchant wholesalers, durable goods.	3,741,311	3,115,203	20.1	1,309,073	1,083,674	20.8	499	468	6.4
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers.	605,868	671,374	−9.8	87,685	90,319	−2.9	402	321	25.3
4232	Furniture and home furnishing merchant wholesalers	117,565	96,286	22.1	31,355	24,930	25.8	850	699	21.6
4233	Lumber and other construction materials merchant wholesalers	287,833	173,229	66.2	658,529	345,473	90.6	206	125	64.7
4234	Professional and commercial equipment and supplies merchant wholesalers.	610,832	520,414	17.4	27,532	27,497	0.1	595	704	−15.5
4235	Metal and mineral (except petroleum) merchant wholesalers	238,675	199,668	19.5	111,398	147,377	−24.4	200	214	−6.5
4236	Household appliances and electrical and electronic goods merchant wholesalers	679,748	550,194	23.5	50,499	38,176	32.3	527	583	−9.6
4237	Hardware, and plumbing and heating equipment and supplies merchant wholesalers.	261,883	171,644	52.6	31,919	26,530	20.3	316	275	14.8
4238	Machinery, equipment, and supplies merchant wholesalers	618,774	500,368	23.7	95,714	92,647	3.3	395	320	23.4
4239	Miscellaneous durable goods merchant wholesalers.	320,132	232,027	38.0	214,442	290,723	−26.2	880	875	0.5
424	Merchant wholesalers, nondurable goods	4,353,039	3,678,682	18.3	2,806,206	3,351,479	−16.3	333	334	−0.5
4241	Paper and paper product merchant wholesalers	136,620	130,932	4.3	43,146	48,021	−10.2	274	289	−5.1
4242	Drugs and druggists' sundries merchant wholesalers.	1,087,103	787,231	38.1	43,310	21,343	102.9	557	433	28.6

Footnotes available at end of table.

Table A6b.
Shipment Characteristics by NAICS[1] for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

NAICS code	NAICS description	Value			Weight			Average distance (GCD) per shipment[2]		
		2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
4243	Apparel, piece goods, and notions merchant wholesalers	144,965	146,976	–1.4	8,080	10,341	–21.9	925	992	–6.7
4244	Grocery and related product merchant wholesalers	988,482	862,824	14.6	351,439	399,734	–12.1	103	150	–31.3
4245	Farm product raw material merchant wholesalers	263,363	222,586	18.3	661,787	924,225	–28.4	220	84	162.1
4246	Chemical and allied products merchant wholesalers	203,629	200,004	1.8	228,101	194,337	17.4	237	239	–0.7
4247	Petroleum and petroleum products merchant wholesalers	967,562	853,663	13.3	1,179,123	1,439,449	–18.1	107	50	112.5
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers	175,376	163,061	7.6	64,738	67,403	–4.0	52	65	–19.9
4249	Miscellaneous nondurable goods merchant wholesalers	385,939	311,404	23.9	226,483	246,626	–8.2	453	574	–21.0
4541	Electronic shopping and mail-order houses	1,007,872	540,509	86.5	52,222	24,336	114.6	645	1,149	–43.9
45431	Fuel dealers	43,286	33,824	28.0	46,044	53,732	–14.3	19	21	–8.7
4931[3]	Warehousing and storage	1,347,716	1,182,016	14.0	305,651	274,944	11.2	368	687	–46.5
5111	Newspaper, periodical, book, and directory publishers	16,389	23,874	–31.4	1,931	4,055	–52.4	S	92	S
551114	Corporate, subsidiary, and regional managing offices	313,218	148,512	110.9	174,849	71,310	145.2	581	904	–35.7

S Withheld because estimate did not meet publication standards.

[1] NAICS codes shown are those covered in the Commodity Flow Survey. NAICS is the North American Industry Classification System.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] For tabulation and publication purposes, NAICS 484 is grouped with NAICS 4931.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A7.
Shipment Characteristics by Origin State: 2022
(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Origin state	Value (in millions of dollars)	Weight (in thousands of tons)	Average distance (GCD) per shipment (2022 miles)[1]
Total...	17,996,782	12,169,793	552
Alabama..	307,125	188,249	327
Alaska...	25,376	S	814
Arizona..	252,707	S	555
Arkansas...	166,275	120,880	629
California..	2,060,567	909,997	897
Colorado...	230,579	118,235	349
Connecticut..	188,093	72,115	295
Delaware...	67,417	34,121	169
District of Columbia..	3,872	292	824
Florida...	684,193	383,500	519
Georgia..	582,995	274,255	518
Hawaii...	29,788	17,903	2,045
Idaho..	83,174	69,725	669
Illinois...	884,918	608,162	473
Indiana...	624,977	434,874	485
Iowa...	261,183	258,251	478
Kansas...	223,335	176,237	404
Kentucky...	359,912	286,001	495
Louisiana...	380,212	515,199	297
Maine..	52,441	54,137	636
Maryland...	198,615	101,897	365
Massachusetts..	371,877	129,890	747
Michigan...	578,424	290,087	452
Minnesota..	414,173	293,581	692
Mississippi...	153,310	144,094	353
Missouri..	365,669	294,513	555
Montana..	43,325	62,362	487
Nebraska...	144,722	174,874	546
Nevada...	97,668	35,514	729
New Hampshire...	61,287	26,134	778
New Jersey...	594,208	271,226	359
New Mexico..	39,216	S	240
New York...	670,924	332,501	515
North Carolina..	530,707	270,288	569
North Dakota...	61,206	167,961	349
Ohio...	780,121	423,155	526
Oklahoma..	173,035	177,299	420
Oregon...	270,840	116,412	655
Pennsylvania...	701,623	487,794	455
Rhode Island...	34,403	15,348	515
South Carolina..	254,641	128,457	575
South Dakota...	53,220	77,316	395
Tennessee..	437,049	225,456	420
Texas..	2,037,039	1,666,484	378
Utah...	272,699	192,785	722
Vermont..	24,331	25,550	516
Virginia..	282,292	208,080	453
Washington...	386,730	145,685	346
West Virginia...	71,171	195,000	350
Wisconsin..	395,529	221,741	479
Wyoming...	27,590	180,283	558

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table A8.

Shipment Characteristics by Destination State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Destination state	Value (in millions of dollars)	Weight (in thousands of tons)	Average distance (GCD) per shipment (2022 miles)[1]
Total	17,996,782	12,169,793	552
Alabama	268,293	183,716	567
Alaska	53,014	S	2,213
Arizona	295,116	S	631
Arkansas	172,116	130,171	544
California	1,967,866	958,100	623
Colorado	260,407	149,584	503
Connecticut	154,548	118,536	476
Delaware	52,052	31,100	408
District of Columbia	14,683	3,215	478
Florida	897,350	440,702	752
Georgia	559,774	291,391	562
Hawaii	40,269	20,776	2,047
Idaho	117,247	72,769	599
Illinois	807,552	519,033	432
Indiana	531,258	383,604	460
Iowa	233,435	234,825	490
Kansas	184,587	160,697	532
Kentucky	347,771	247,281	556
Louisiana	420,837	547,364	609
Maine	73,406	38,497	611
Maryland	216,994	133,488	490
Massachusetts	325,526	144,071	546
Michigan	626,045	314,635	510
Minnesota	340,087	247,176	581
Mississippi	163,412	133,558	549
Missouri	350,717	229,255	520
Montana	72,561	46,317	762
Nebraska	121,040	152,295	581
Nevada	117,898	60,204	684
New Hampshire	77,853	34,080	631
New Jersey	504,727	224,356	464
New Mexico	73,939	S	636
New York	744,457	380,684	438
North Carolina	484,563	288,014	593
North Dakota	85,336	164,503	692
Ohio	702,383	492,709	478
Oklahoma	183,824	159,162	516
Oregon	208,443	117,633	539
Pennsylvania	686,660	501,557	479
Rhode Island	32,411	14,191	558
South Carolina	260,850	124,344	591
South Dakota	56,724	80,578	545
Tennessee	450,317	260,688	542
Texas	2,169,299	1,783,127	559
Utah	219,771	135,410	528
Vermont	29,759	29,127	494
Virginia	326,902	207,925	508
Washington	430,253	179,271	427
West Virginia	82,083	118,909	544
Wisconsin	357,026	211,942	467
Wyoming	43,335	61,221	610

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Temperature Control Series

Table T1a.

Shipment Characteristics of Temperature Controlled[1] Shipments by Mode of Transportation for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Mode of transportation	Value		Weight		Average distance (GCD) per shipment (2022 miles)[2]
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
All modes	**2,992,166**	**100.0**	**1,237,954**	**100.0**	**290**
Single modes.	**2,770,951**	**92.6**	**1,189,350**	**96.1**	**104**
Truck[3].	2,706,530	90.5	1,114,980	90.1	97
For-hire truck	1,225,792	41.0	452,385	36.5	308
Company-owned truck.	1,337,827	44.7	590,610	47.7	65
Customer pick-up[4].	142,911	4.8	71,986	5.8	124
Rail	37,428	1.3	47,466	3.8	945
Water	9,092	0.3	17,766	1.4	889
Inland water	S	S	S	S	175
Great Lakes.	S	S	S	S	S
Deep sea	S	S	S	S	1,030
Multiple waterways	S	S	S	S	S
Air (includes truck and air)	12,209	0.4	231	Z	1,290
Pipeline[5]	5,634	0.2	8,659	0.7	S
Other single modes[6].	S	S	S	S	S
Multiple modes	**187,152**	**6.3**	**32,387**	**2.6**	**832**
Parcel, U.S. Postal Service, or courier. . . .	155,658	5.2	2,502	0.2	832
Truck and rail	25,805	0.9	28,012	2.3	616
Truck and water.	4,746	0.2	1,756	0.1	748
Rail and water	S	S	S	S	S
Other multiple modes[6].	8	Z	5	Z	663
Unknown modes[7]	**34,062**	**1.1**	**16,216**	**1.3**	**753**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[4] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[5] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[6] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[7] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table T1b.

Shipment Characteristics of Temperature Controlled[1] Shipments by Mode of Transportation for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Mode of transportation	Value			Weight			Average distance (GCD) per shipment[2]		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
All modes	**2,992,166**	**1,922,133**	**55.7**	**1,237,954**	**804,713**	**53.8**	**290**	**255**	**13.7**
Single modes.	**2,770,951**	**1,730,700**	**60.1**	**1,189,350**	**778,082**	**52.9**	**104**	**127**	**−18.2**
Truck[3].	2,706,530	1,659,015	63.1	1,114,980	711,984	56.6	97	117	−17.4
For-hire truck	1,225,792	953,352	N	452,385	368,243	N	308	249	N
Company-owned truck.	1,337,827	705,663	N	590,610	343,740	N	65	63	N
Customer pick-up[4].	142,911	N	N	71,986	N	N	124	N	N
Rail	37,428	11,201	234.1	47,466	23,389	102.9	945	577	63.7
Water	9,092	15,972	−43.1	17,766	36,197	−50.9	889	585	52.0
Inland water	S	8,831	S	S	24,964	S	175	S	S
Great Lakes.	S	S	S	S	S	S	S	S	S
Deep sea	S	6,777	S	S	11,048	S	1,030	646	59.6
Multiple waterways	S	363	S	S	184	S	S	96	S
Air (includes truck and air)	12,209	43,225	−71.8	231	725	−68.1	1,290	1,393	−7.4
Pipeline[5]	5,634	1,286	337.9	8,659	5,787	49.6	S	S	S
Other single modes[6]	S	S	S	S	S	S	S	S	S
Multiple modes	**187,152**	**191,433**	**−2.2**	**32,387**	**26,632**	**21.6**	**832**	**866**	**−3.9**
Parcel, U.S. Postal Service, or courier. . .	155,658	152,777	1.9	2,502	545	358.8	832	866	−3.9
Truck and rail	25,805	12,674	103.6	28,012	17,906	56.4	616	1,155	−46.7
Truck and water.	4,746	24,932	−81.0	1,756	7,744	−77.3	748	750	−0.3
Rail and water	S	329	S	S	S	S	S	1,997	S
Other multiple modes[6].	8	720	−98.8	5	271	−98.2	663	1,788	−62.9
Unknown modes[7]	**34,062**	**N**	**N**	**16,216**	**N**	**N**	**753**	**N**	**N**

N Not available or comparable.

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[4] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[5] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[6] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[7] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table T2a.
Shipment Characteristics of Temperature Controlled[1] Shipments by Distance Shipped for the United States: 2022
(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Distance shipped[2]	Value		Weight	
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
Total..	**2,992,166**	**100.0**	**1,237,954**	**100.0**
Less than 50 miles...................................	1,031,209	34.5	525,218	42.4
50 to 99 miles......................................	371,623	12.4	182,383	14.7
100 to 249 miles	600,320	20.1	200,072	16.2
250 to 499 miles	376,984	12.6	137,223	11.1
500 to 749 miles	213,472	7.1	55,482	4.5
750 to 999 miles	128,911	4.3	42,003	3.4
1,000 to 1,499 miles	128,949	4.3	47,787	3.9
1,500 to 1,999 miles	76,923	2.6	25,367	2.0
2,000 miles or more	63,776	2.1	22,420	1.8

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.
[2] Shipments are grouped into distance categories based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere over the surface of that sphere.
Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table T2b.
Shipment Characteristics of Temperature Controlled[1] Shipments by Distance Shipped for the United States: 2022 and 2017
(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Distance shipped[2]	Value			Weight		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change
Total	**2,992,166**	**1,922,133**	**55.7**	**1,237,954**	**804,713**	**53.8**
Less than 50 miles	1,031,209	630,289	63.6	525,218	337,646	55.6
50 to 99 miles.	371,623	254,979	45.7	182,383	115,838	57.4
100 to 249 miles	600,320	392,194	53.1	200,072	154,973	29.1
250 to 499 miles	376,984	225,155	67.4	137,223	82,415	66.5
500 to 749 miles	213,472	137,302	55.5	55,482	38,599	43.7
750 to 999 miles	128,911	90,082	43.1	42,003	27,859	50.8
1,000 to 1,499 miles	128,949	83,266	54.9	47,787	26,297	81.7
1,500 to 1,999 miles	76,923	67,583	13.8	25,367	12,559	102.0
2,000 miles or more	63,776	41,282	54.5	22,420	8,528	162.9

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.
[2] Shipments are grouped into distance categories based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere over the surface of that sphere.
Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Tables T3a.
Shipment Characteristics of Temperature Controlled[1] Shipments by Shipment Weight for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Shipment weight	Value		Weight		Average distance (GCD) per shipment (2022 miles)[2]
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
Total..............................	2,992,166	100.0	1,237,954	100.0	290
Less than 50 lbs.......................	208,003	7.0	9,298	0.8	373
50 to 99 lbs..........................	54,724	1.8	5,265	0.4	125
100 to 499 lbs........................	177,761	5.9	28,100	2.3	96
500 to 749 lbs........................	72,128	2.4	15,772	1.3	150
750 to 999 lbs........................	64,030	2.1	13,464	1.1	98
1,000 to 9,999 lbs.....................	804,641	26.9	207,191	16.7	136
10,000 to 49,999 lbs.	1,395,042	46.6	725,403	58.6	312
50,000 to 99,999 lbs.	112,572	3.8	116,905	9.4	154
100,000 lbs. or more..................	103,265	3.5	116,556	9.4	403

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Tables T3b.
Shipment Characteristics of Temperature Controlled[1] Shipments by Shipment Weight for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Shipment weight	Value			Weight			Average distance (GCD) per shipment[2]		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
Total...................	2,992,166	1,922,133	55.7	1,237,954	804,713	53.8	290	255	13.7
Less than 50 lbs.	208,003	164,775	26.2	9,298	2,030	357.9	373	384	−2.9
50 to 99 lbs.	54,724	44,597	22.7	5,265	1,980	166.0	125	109	14.9
100 to 499 lbs...........	177,761	121,014	46.9	28,100	17,030	65.0	96	99	−3.2
500 to 749 lbs...........	72,128	47,021	53.4	15,772	10,306	53.0	150	109	37.1
750 to 999 lbs...........	64,030	39,326	62.8	13,464	9,440	42.6	98	115	−14.9
1,000 to 9,999 lbs........	804,641	552,860	45.5	207,191	148,289	39.7	136	169	−19.6
10,000 to 49,999 lbs.	1,395,042	869,063	60.5	725,403	444,554	63.2	312	339	−8.0
50,000 to 99,999 lbs.	112,572	48,907	130.2	116,905	91,603	27.6	154	157	−1.4
100,000 lbs. or more.....	103,265	34,569	198.7	116,556	79,482	46.6	403	760	−47.0

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table T4a.

Shipment Characteristics of Temperature Controlled[1] Shipments by Two-Digit Commodity for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (2022 miles)[2]
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
	All commodities[3]................................	**2,992,166**	**100.0**	**1,237,954**	**100.0**	**290**
01	Live animals and live fish................................	S	S	S	S	610
02	Cereal grains (includes seed)................................	2,966	0.1	10,540	0.9	72
03	Agricultural products (excludes animal feed, cereal grains, and forage products)................................	134,793	4.5	68,730	5.6	197
04	Animal feed, eggs, honey, and other products of animal origin	19,281	0.6	S	S	232
05	Meat, poultry, fish, seafood, and their preparations...............	504,927	16.9	119,222	9.6	592
06	Milled grain products and preparations and bakery products	113,992	3.8	38,841	3.1	167
07	Other prepared foodstuffs and fats and oils......................	489,428	16.4	399,296	32.3	191
08	Alcoholic beverages, and denatured alcohol	270,037	9.0	119,981	9.7	192
09	Tobacco products	5,513	0.2	152	Z	841
10	Monumental or building stone................................	S	S	S	S	S
11	Natural sands	S	S	S	S	S
12	Gravel and crushed stone (excludes dolomite and slate)	S	S	S	S	12
13	Other nonmetallic minerals, not elsewhere classified..............	S	S	15	Z	85
14	Metallic ores and concentrates................................	S	S	S	S	S
15	Coal................................	S	S	S	S	S
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)................................	17,396	0.6	20,304	1.6	163
18	Fuel oils (includes diesel, Bunker C, and biodiesel)	22,741	0.8	27,511	2.2	32
19	Other coal and petroleum products, not elsewhere classified.	29,473	1.0	64,359	5.2	39
20	Basic chemicals	24,196	0.8	63,951	5.2	296
21	Pharmaceutical products................................	416,794	13.9	3,819	0.3	548
22	Fertilizers................................	16,192	0.5	30,255	2.4	246
23	Chemical products and preparations, not elsewhere classified.	28,582	1.0	S	S	244
24	Plastics and rubber	S	S	S	S	491
25	Logs and other wood in the rough	S	S	S	S	S
26	Wood products	S	S	S	S	S
27	Pulp, newsprint, paper, and paperboard.........................	14	Z	S	S	154
28	Paper or paperboard articles................................	128	Z	86	Z	83
29	Printed products	S	S	S	S	S
30	Textiles, leather, and articles of textiles or leather	S	S	S	S	715
31	Nonmetallic mineral products	S	S	126	Z	S
32	Base metal in primary or semifinished forms and in finished basic shapes................................	59	Z	23	Z	272
33	Articles of base metal................................	S	S	S	S	342
34	Machinery	S	S	S	S	812
35	Electronic and other electrical equipment and components and office equipment................................	20,377	0.7	3,808	0.3	676
36	Motorized and other vehicles (including parts)...................	S	S	S	S	600
37	Transportation equipment, not elsewhere classified...............	S	S	S	S	S
38	Precision instruments and apparatus...........................	21,772	0.7	1,299	0.1	358
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	S	S	S	S	545
40	Miscellaneous manufactured products	212	Z	S	S	371
41	Waste and scrap	S	S	S	S	S
43	Mixed freight................................	850,306	28.4	219,492	17.7	168

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table T4b.

Shipment Characteristics of Temperature Controlled[1] Shipments by Two-Digit Commodity for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value			Weight			Average distance (GCD) per shipment[2]		
		2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
	All commodities[3]	**2,992,166**	**1,922,133**	**55.7**	**1,237,954**	**804,713**	**53.8**	**290**	**255**	**13.7**
01	Live animals and live fish.	S	2,394	S	S	404	S	610	1,000	−39.0
02	Cereal grains (includes seed)	2,966	S	S	10,540	S	S	72	116	−37.9
03	Agricultural products (excludes animal feed, cereal grains, and forage products)	134,793	105,222	28.1	68,730	65,869	4.3	197	342	−42.4
04	Animal feed, eggs, honey, and other products of animal origin	19,281	14,157	36.2	S	8,481	S	232	77	201.1
05	Meat, poultry, fish, seafood, and their preparations	504,927	344,343	46.6	119,222	92,145	29.4	592	239	147.9
06	Milled grain products and preparations and bakery products	113,992	49,767	129.1	38,841	23,242	67.1	167	160	4.2
07	Other prepared foodstuffs and fats and oils	489,428	246,159	98.8	399,296	135,342	195.0	191	150	27.3
08	Alcoholic beverages, and denatured alcohol	270,037	33,460	707.0	119,981	13,107	815.4	192	261	−26.3
09	Tobacco products	5,513	2,043	169.8	152	79	92.8	841	261	222.9
10	Monumental or building stone	S	S	S	S	S	S	S	S	S
11	Natural sands	S	S	S	S	460	S	S	S	S
12	Gravel and crushed stone (excludes dolomite and slate)	S	1	S	S	S	S	12	13	−7.6
13	Other nonmetallic minerals, not elsewhere classified.	S	47	S	15	1,242	−98.8	85	30	180.7
14	Metallic ores and concentrates	S	S	S	S	S	S	S	S	S
15	Coal	S	S	S	S	S	S	S	S	S
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)	17,396	4,648	274.2	20,304	9,282	118.7	163	159	2.6
18	Fuel oils (includes diesel, Bunker C, and biodiesel)	22,741	7,104	220.1	27,511	12,177	125.9	32	S	S
19	Other coal and petroleum products, not elsewhere classified.	29,473	29,008	1.6	64,359	113,232	−43.2	39	52	−25.3
20	Basic chemicals	24,196	30,724	−21.2	63,951	84,894	−24.7	296	315	−6.2
21	Pharmaceutical products	416,794	425,602	−2.1	3,819	3,974	−3.9	548	411	33.1
22	Fertilizers	16,192	6,292	157.4	30,255	23,939	26.4	246	119	106.5
23	Chemical products and preparations, not elsewhere classified.	28,582	32,366	−11.7	S	10,626	S	244	794	−69.3
24	Plastics and rubber.	S	3,328	S	S	1,135	S	491	383	28.2
25	Logs and other wood in the rough	S	S	S	S	S	S	S	S	S
26	Wood products	S	207	S	S	S	S	S	S	S
27	Pulp, newsprint, paper, and paperboard	14	160	−91.0	S	S	S	154	S	S
28	Paper or paperboard articles	128	171	−25.4	86	216	−60.3	83	96	−13.2
29	Printed products	S	607	S	S	55	S	S	619	S
30	Textiles, leather, and articles of textiles or leather	S	394	S	S	35	S	715	S	S
31	Nonmetallic mineral products	S	1,057	S	126	4,961	−97.5	S	181	S
32	Base metal in primary or semifinished forms and in finished basic shapes	59	822	−92.8	23	303	−92.5	272	342	−20.5
33	Articles of base metal	S	453	S	S	59	S	342	S	S
34	Machinery	S	2,597	S	S	149	S	812	832	−2.5
35	Electronic and other electrical equipment and components and office equipment.	20,377	1,526	1235.7	3,808	82	4540.9	676	867	−22.0
36	Motorized and other vehicles (including parts)	S	1,671	S	S	S	S	600	238	152.1
37	Transportation equipment, not elsewhere classified.	S	S	S	S	S	S	S	S	S
38	Precision instruments and apparatus	21,772	2,612	733.5	1,299	32	4010.6	358	S	S

Footnotes available at end of table.

Table T4b.

Shipment Characteristics of Temperature Controlled[1] Shipments by Two-Digit Commodity for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value			Weight			Average distance (GCD) per shipment[2]		
		2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	S	S	S	S	S	S	545	S	S
40	Miscellaneous manufactured products.	212	1,402	–84.9	S	173	S	371	992	–62.6
41	Waste and scrap	S	S	S	S	S	S	S	S	S
43	Mixed freight	850,306	570,883	48.9	219,492	196,911	11.5	168	108	55.4

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table T5.

Shipment Characteristics of Temperature Controlled[1] Shipments by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (2022 miles)[2]
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
	All commodities[3]..	**2,992,166**	**100.0**	**1,237,954**	**100.0**	**290**
010	Live animals and live fish..	S	S	S	S	610
021	Wheat..	S	S	S	S	216
022	Corn, except sweet...	1,252	Z	4,946	0.4	79
029	Other cereal grains..	S	S	S	S	42
031	Fresh or chilled potatoes, except sweet....................................	12,373	0.4	13,549	1.1	99
032	Fresh or chilled edible vegetables (except potatoes), and dried vegetables....	60,642	2.0	32,162	2.6	66
033	Fruit and nuts, edible, fresh, chilled, or dried..............................	45,854	1.5	18,225	1.5	200
034	Soy beans...	1,572	0.1	2,761	0.2	147
035	Oil seeds and nuts, except olives and soy beans...........................	S	S	S	S	S
036	Bulbs, live plants, and seeds for sowing, not elsewhere classified.............	2,889	0.1	1,106	0.1	634
039	Fresh-cut flowers, plants, and parts of plants, and other agricultural products...	11,441	0.4	923	0.1	849
041	Eggs, cereal straw or husks, forage products, residues and waste from the food industries used in animal feeding, other products of animal origin, not elsewhere classified...	7,450	0.2	4,241	0.3	140
042	Animal feed preparations...	S	S	S	S	593
051	Meat and poultry, fresh, chilled, or frozen, meat in brine, dried or smoked.....	454,720	15.2	114,196	9.2	657
052	Fish (except live), seafood, and their preparations..........................	50,028	1.7	4,992	0.4	137
053	Preparations, extracts, and juices of meat, fish, or seafood..................	S	S	S	S	S
061	Wheat flour, groats, and meal..	2,230	0.1	927	0.1	67
062	Malt, milled rice and corn (broken, flour, groats, and meal, inulin, wheat gluten, milled cereals and other vegetables and grains).....................	S	S	S	S	128
063	Bakery products and food preparations of cereals, flour, starch or milk........	26,451	0.9	11,853	1.0	103
064	Bakery products, including frozen...	83,726	2.8	25,428	2.1	185
071	Dairy products except beverages and preparations of milk....................	229,527	7.7	98,246	7.9	114
072	Processed or prepared vegetables, fruit, or nuts, except dried or milled, and juices..	73,999	2.5	36,792	3.0	129
073	Coffee, tea, and spices, except unprocessed coffee and unfermented tea......	3,699	0.1	1,235	0.1	107
074	Animal or vegetable fats, oils, waxes, and their cleavage products, prepared edible fats, and flours and meals of oil seeds (excludes oils and fats for use as biodiesel)...	16,872	0.6	8,858	0.7	109
075	Sugars confectionery, solid or syrups not containing added flavoring or coloring..	6,154	0.2	S	S	118
076	Confectionery, cocoa, and cocoa preparations.............................	35,964	1.2	7,114	0.6	738
077	Edible preparations, not elsewhere classified, and vinegar...................	30,687	1.0	8,057	0.7	123
078	Nonalcoholic beverages, not elsewhere classified, and ice...................	92,526	3.1	221,822	17.9	83
081	Malt beer..	137,533	4.6	86,166	7.0	38
082	Wine and other fermented beverages......................................	60,501	2.0	16,285	1.3	466
083	Spirituous beverages and undenatured ethyl alcohol........................	71,199	2.4	16,617	1.3	90
084	Denatured ethyl alcohol, not for ingestion or use as biofuel..................	805	Z	S	S	258
090	Tobacco products..	5,513	0.2	152	Z	841
100	Monumental or building stone, except dolomite............................	S	S	S	S	S
110	Natural sands, except metal-bearing......................................	S	S	S	S	S
120	Gravel and crushed stone, except dolomite and slate.......................	S	S	S	S	12
131	Salt...	S	S	15	Z	85
132	Natural calcium phosphates, natural aluminum-calcium phosphates, and phosphatic chalk..	S	S	S	S	S
133	Dolomite, including monumental, building, and crushed.....................	S	S	S	S	S
139	Other nonmetallic minerals, not elsewhere classified.......................	S	S	S	S	S
141	Iron ores and concentrates...	S	S	S	S	S
149	Metallic ores and concentrates, except iron................................	S	S	S	S	S
151	Nonagglomerated bituminous coal..	S	S	S	S	S
159	Coal, except nonagglomerated bituminous coal............................	S	S	S	S	S
171	Gasoline, and blends of gasoline and 10 percent ethanol....................	12,007	0.4	12,510	1.0	62
172	Aviation turbine fuel (types a and b), and kerosene.........................	435	Z	469	Z	34
175	Ethanol, ethanol blends of more than 10 percent ethanol, and other fuel alcohols..	S	S	S	S	708

Footnotes available at end of table.

Shipment Characteristics of Temperature Controlled[1] Shipments by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (2022 miles)[2]
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
176	Ethanol, for use as biofuels...	4,798	0.2	7,002	0.6	649
181	Fuel oils	18,390	0.6	20,654	1.7	30
182	Blends of fuel oils and biofuel, biodiesel...................................	4,351	0.1	6,857	0.6	S
191	Lubricating oils and greases...	3,589	0.1	10,317	0.8	S
192	Refined petroleum oils and oils obtained from bituminous minerals, not elsewhere classified..	1,162	Z	1,391	0.1	128
193	Gaseous hydrocarbons	8,566	0.3	11,825	1.0	34
199	Other products of petroleum refining, and coal products, not elsewhere classified..	16,156	0.5	40,826	3.3	70
201	Sodium hydroxide (caustic soda) and potassium hydroxide (caustic potash)...	227	Z	526	Z	211
202	Inorganic chemicals, not elsewhere classified	13,193	0.4	57,290	4.6	77
203	Cyclic hydrocarbons	S	S	S	S	324
204	Phenols, phenol-alcohols, aldehydes, cyclic polymers of aldehydes, and acyclic alcohols, and organic acids....................................	467	Z	167	Z	584
205	Organic chemicals, not elsewhere classified	9,766	0.3	4,108	0.3	790
210	Pharmaceutical products...	416,794	13.9	3,819	0.3	548
220	Fertilizers and fertilizer materials	16,192	0.5	30,255	2.4	246
231	Paints and varnishes, enamels, tanning or dyeing extracts, tannins and their derivatives, inks, lakes, toners, and ink...................................	6,220	0.2	1,523	0.1	232
232	Essential oils and resinoids, and perfumery, cosmetic, or toilet preparations...	2,324	0.1	486	Z	908
233	Soap, organic surface-active agents, cleaning preparations, polishes and creams, and scouring preps..	4,332	0.1	1,914	0.2	212
234	Photographic film, plates, paper, paperboard, or textiles, and chemical preps for photographic use	1,461	Z	183	Z	S
235	Insecticides, rodenticides, fungicides, herbicides, disinfectants, etc.	3,705	0.1	S	S	365
239	Other chemical products and preparations: glues, prepared explosives, activated natural mineral products, anti-knock preparations, etc.	10,541	0.4	S	S	297
241	Plastics and rubber in primary forms or sheets.............................	S	S	S	S	561
242	Manmade fibers and plastics basic shapes and articles......................	164	Z	46	Z	396
243	Rubber articles...	S	S	S	S	1,279
250	Logs and other wood in the rough	S	S	S	S	S
261	Wood chips or particles..	S	S	S	S	S
262	Lumber, wood continuously shaped along any of its edges or faces, shingles and shakes	S	S	S	S	S
263	Veneer sheets and sheets for plywood, particle board, fiberboard, plywood, and similar laminated wood	S	S	S	S	S
264	Windows, doors, thresholds, and builders' joinery and carpentry of wood, except shingles and shakes	S	S	2	Z	S
269	Other wood products..	S	S	S	S	S
271	Pulp of fibrous cellulosic materials	S	S	S	S	S
272	Newsprint in large rolls or sheets	S	S	S	S	S
273	Uncoated paper, tissue, and paperboard in large rolls or sheets	8	Z	1	Z	151
274	Coated, impregnated, treated, or worked paper and paperboard, in large rolls or sheets..	S	S	S	S	288
280	Paper or paperboard articles	128	Z	86	Z	83
291	Printed books, brochures, leaflets, and similar printed products	S	S	S	S	S
292	Newspapers, journals, and periodicals	S	S	S	S	S
293	Advertising material, commercial or trade catalogues, and similar printed products	S	S	S	S	S
299	Other printed products	Z	Z	Z	Z	S
301	Textile fibers, yarns, and broad woven or knitted fabrics	S	S	S	S	S
302	Textile clothing and accessories, and headgear, except safety	S	S	S	S	553
303	Textiles and textile articles, not elsewhere classified	S	S	10	Z	713
304	Leather footwear..	S	S	S	S	1,543
305	Leather and articles of leather or allied materials, and dressed fur skins	S	S	S	S	S
311	Hydraulic cements...	S	S	S	S	S
312	Ceramic products	S	S	S	S	S
313	Glass and glass products...	S	S	S	S	771
319	Other nonmetallic mineral products.......................................	S	S	126	Z	S

Footnotes available at end of table.

Shipment Characteristics of Temperature Controlled[1] Shipments by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (2022 miles)[2]
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
321	Ferro-alloys, and iron and steel in primary or semi-finished forms, or in powders or granules	S	S	S	S	S
322	Flat-rolled products of iron or steel	S	S	S	S	S
323	Bars, rods, angles, shapes, sections, and wire, of iron or steel	S	S	S	S	S
324	Nonferrous metal, except precious, unwrought, or in finished basic shapes, or in powders or granules	56	Z	23	Z	386
331	Pipes, tubes, and fittings.	S	S	S	S	1,124
332	Structures and parts, except prefabricated buildings	Z	Z	Z	Z	137
333	Hand tools, cutlery, except of precious metals, interchangeable tools for hand or machine tools, hardware, and industrial fasteners	S	S	S	S	200
339	Other articles of metal	S	S	S	S	S
341	Internal-combustion engines and parts.	S	S	S	S	S
342	Turbines, boilers, nuclear reactors, and nonelectric engines and motors, except internal-combustion.	S	S	S	S	S
343	Pumps, compressors, fans, and ventilating or recycling hoods incorporating a fan.	Z	Z	S	S	S
344	Air-conditioning, refrigerating, or freezing equipment	S	S	S	S	S
345	Materials-handling, excavating, boring, and related machinery and equipment	S	S	S	S	S
349	Other mechanical machinery, not elsewhere classified	S	S	S	S	929
351	Electric motors, generators, rotary or static converters, and transformers	285	Z	S	S	969
352	Electric cooking appliances, electro-thermic, or electro-mechanical domestic appliances.	69	Z	S	S	614
353	Line telephone or telegraph apparatus	6	Z	Z	Z	1,312
354	Electronic entertainment products, except parts	9,657	0.3	3,081	0.2	764
355	Computer and electronic office equipment	S	S	S	S	677
356	Prepared unrecorded or prerecorded media	S	S	S	S	277
357	Transmission, and reception apparatus for radio, television, radar, and remote-control	S	S	S	S	S
358	Electronic components and parts	1,386	Z	S	S	1,193
359	Other electronic and electrical equipment, not elsewhere classified.	7,587	0.3	S	S	440
361	Motorized vehicles for transport of less than 10 people, except motorcycles, armored, and recreational	S	S	S	S	S
362	Motor vehicles for the transport of goods, and road tractors for semi-trailers . .	S	S	S	S	S
363	Other vehicles	S	S	S	S	S
364	Motor vehicles parts and accessories except motorcycles and armored fighting vehicles	S	S	S	S	600
371	Railway equipment including locomotives and rolling stock, railway track fixtures and fittings, and parts	S	S	S	S	S
372	Aircraft and spacecraft.	S	S	S	S	S
373	Ships, boats, and floating structures	S	S	S	S	S
381	Optical elements, instruments, and apparatus, except photographic and cinematographic.	S	S	S	S	S
382	Photographic and photocopying machines	S	S	S	S	S
383	Surveying, hydrographic, oceanographic, hydrological, meteorological, and geophysical instruments and appliances	42	Z	S	S	844
384	Instruments, apparatus, and appliances for medical, surgical, dental, veterinary, or similar purposes	11,755	0.4	S	S	285
385	Meters and other instruments and apparatus for measuring or process control.	1,729	0.1	24	Z	1,173
390	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs.	S	S	S	S	545
401	Arms and ammunition	S	S	S	S	S
402	Toys, games, and sporting equipment.	S	S	S	S	349
409	Miscellaneous manufactured products	183	Z	S	S	429
411	Metallic waste and scrap	S	S	S	S	S

Footnotes available at end of table.

Table T5.

Shipment Characteristics of Temperature Controlled[1] Shipments by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (2022 miles)[2]
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
412	Nonmetallic waste and scrap, except from food processing	S	S	S	S	S
439	Mixed freight.	850,306	28.4	219,492	17.7	168

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table T6a.

Shipment Characteristics of Temperature Controlled[1] Shipments by NAICS[2] for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

NAICS code	NAICS description	Value (in millions of dollars)	Weight (in thousands of tons)	Average distance[3] (GCD) per shipment (2022 miles)
	Total	**2,992,166**	**1,237,954**	**290**
212	Mining (except oil and gas)	S	40	S
31-33	Manufacturing	1,030,045	596,514	386
311	Food manufacturing	719,415	259,924	316
312	Beverage and tobacco product manufacturing	123,935	217,561	337
313	Textile mills	Z	S	S
314	Textile product mills.	S	S	976
315	Apparel manufacturing.	S	S	S
316	Leather and allied product manufacturing	S	S	673
321	Wood product manufacturing.	S	S	S
322	Paper manufacturing	S	82	198
323	Printing and related support activities.	3	Z	S
324	Petroleum and coal products manufacturing.	26,492	52,298	77
325	Chemical manufacturing	148,959	63,228	879
326	Plastics and rubber products manufacturing	485	254	362
327	Nonmetallic mineral product manufacturing	38	S	S
331	Primary metal manufacturing	S	S	509
332	Fabricated metal product manufacturing.	S	S	1,133
333	Machinery manufacturing	S	S	673
334	Computer and electronic product manufacturing	3,249	S	1,272
335	Electrical equipment, appliance, and component manufacturing.	1,840	74	580
336	Transportation equipment manufacturing	S	S	514
337	Furniture and related product manufacturing	S	S	529
339	Miscellaneous manufacturing	2,186	70	851
42	Wholesale trade	1,400,171	502,687	112
423	Merchant wholesalers, durable goods	28,980	2,114	326
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers	165	35	743
4232	Furniture and home furnishing merchant wholesalers	8	13	S
4233	Lumber and other construction materials merchant wholesalers	24	8	102
4234	Professional and commercial equipment and supplies merchant wholesalers	25,706	1,363	328
4235	Metal and mineral (except petroleum) merchant wholesalers	S	S	S
4236	Household appliances and electrical and electronic goods merchant wholesalers . . .	S	S	S
4237	Hardware, and plumbing and heating equipment and supplies merchant wholesalers	S	S	979
4238	Machinery, equipment, and supplies merchant wholesalers	434	116	576
4239	Miscellaneous durable goods merchant wholesalers.	278	87	328
424	Merchant wholesalers, nondurable goods.	1,371,191	500,574	100
4241	Paper and paper product merchant wholesalers	966	192	S
4242	Drugs and druggists' sundries merchant wholesalers	201,667	S	478
4243	Apparel, piece goods, and notions merchant wholesalers	S	S	S
4244	Grocery and related product merchant wholesalers	832,667	289,996	81
4245	Farm product raw material merchant wholesalers	8,434	18,296	366
4246	Chemical and allied products merchant wholesalers	7,174	25,362	91
4247	Petroleum and petroleum products merchant wholesalers	31,528	66,120	36
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers	173,474	63,417	52
4249	Miscellaneous nondurable goods merchant wholesalers	115,225	34,478	373
4541	Electronic shopping and mail-order houses	82,380	2,486	869
45431	Fuel dealers	6,380	7,523	S
4931[4]	Warehousing and storage.	379,481	109,450	190
5111	Newspaper, periodical, book, and directory publishers	247	143	S
551114	Corporate, subsidiary, and regional managing offices	93,461	19,112	251

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] NAICS codes shown are those covered in the Commodity Flow Survey. NAICS is the North American Industry Classification System.

[3] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[4] For tabulation and publication purposes, NAICS 484 is grouped with NAICS 4931.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table T6b.

Shipment Characteristics of Temperature Controlled[1] Shipments by NAICS[2] for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

NAICS code	NAICS description	Value			Weight			Average distance (GCD) per shipment[3]		
		2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
	Total...	**2,992,166**	**1,922,133**	**55.7**	**1,237,954**	**804,713**	**53.8**	**290**	**255**	**13.7**
212	Mining (except oil and gas).........................	S	500	S	40	1,749	−97.7	S	S	S
31-33	Manufacturing	1,030,045	656,701	56.9	596,514	387,042	54.1	386	404	−4.4
311	Food manufacturing.............................	719,415	453,142	58.8	259,924	196,537	32.3	316	266	18.9
312	Beverage and tobacco product manufacturing.....................	123,935	11,812	949.2	217,561	10,285	2015.4	337	780	−56.7
313	Textile mills..................................	Z	S	S	S	S	S	S	S	S
314	Textile product mills...........................	S	S	S	S	S	S	976	S	S
315	Apparel manufacturing.........................	S	S	S	S	S	S	S	S	S
316	Leather and allied product manufacturing..........................	S	S	S	S	83	S	673	S	S
321	Wood product manufacturing.....................	S	145	S	S	S	S	S	276	S
322	Paper manufacturing...........................	S	282	S	82	S	S	198	656	−69.9
323	Printing and related support activities	3	777	−99.7	Z	68	−99.8	S	661	S
324	Petroleum and coal products manufacturing.....................	26,492	20,943	26.5	52,298	86,471	−39.5	77	89	−13.4
325	Chemical manufacturing.........................	148,959	158,997	−6.3	63,228	86,334	−26.8	879	847	3.7
326	Plastics and rubber products manufacturing........	485	1,851	−73.8	254	479	−46.9	362	430	−15.7
327	Nonmetallic mineral product manufacturing.....................	38	691	−94.5	S	4,927	S	S	S	S
331	Primary metal manufacturing	S	711	S	S	337	S	509	350	45.4
332	Fabricated metal product manufacturing..........................	S	1,059	S	S	204	S	1,133	584	93.9
333	Machinery manufacturing........................	S	1,158	S	S	128	S	673	876	−23.2
334	Computer and electronic product manufacturing.........	3,249	S	S	S	9	S	1,272	1,240	2.6
335	Electrical equipment, appliance, and component manufacturing ...	1,840	668	175.5	74	48	55.6	580	825	−29.7
336	Transportation equipment manufacturing	S	1,002	S	S	S	S	514	S	S
337	Furniture and related product manufacturing.....................	S	S	S	S	S	S	529	927	−43.0
339	Miscellaneous manufacturing	2,186	1,712	27.7	70	32	123.1	851	1,057	−19.5
42	Wholesale trade.................................	1,400,171	974,993	43.6	502,687	336,576	49.4	112	140	−20.4
423	Merchant wholesalers, durable goods...........................	28,980	19,881	45.8	2,114	6,850	−69.1	326	231	41.3
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers.................................	165	1,410	−88.3	35	S	S	743	110	574.2
4232	Furniture and home furnishing merchant wholesalers	8	16	−51.5	13	S	S	S	S	S
4233	Lumber and other construction materials merchant wholesalers .	24	450	−94.8	8	3,350	−99.8	102	38	166.6
4234	Professional and commercial equipment and supplies merchant wholesalers.................................	25,706	14,838	73.2	1,363	984	38.5	328	273	20.0
4235	Metal and mineral (except petroleum) merchant wholesalers	S	6	S	S	1	S	S	517	S
4236	Household appliances and electrical and electronic goods merchant wholesalers........................	S	S	S	S	S	S	S	1,590	S
4237	Hardware, and plumbing and heating equipment and supplies merchant wholesalers........................	S	348	S	S	210	S	979	S	S
4238	Machinery, equipment, and supplies merchant wholesalers......	434	1,778	−75.6	116	769	−84.9	576	89	545.1
4239	Miscellaneous durable goods merchant wholesalers.............	278	1,009	−72.5	87	661	−86.9	328	428	−23.3
424	Merchant wholesalers, nondurable goods	1,371,191	955,112	43.6	500,574	329,726	51.8	100	135	−25.9
4241	Paper and paper product merchant wholesalers	966	1,113	−13.2	192	S	S	S	482	S
4242	Drugs and druggists' sundries merchant wholesalers............	201,667	234,413	−14.0	S	1,380	S	478	299	60.0
4243	Apparel, piece goods, and notions merchant wholesalers	S	377	S	S	212	S	S	1,069	S
4244	Grocery and related product merchant wholesalers	832,667	614,248	35.6	289,996	234,659	23.6	81	117	−30.9

Footnotes available at end of table.

Shipment Characteristics of Temperature Controlled[1] Shipments by NAICS[2] for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

NAICS code	NAICS description	Value			Weight			Average distance (GCD) per shipment[3]		
		2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
4245	Farm product raw material merchant wholesalers..............	8,434	S	S	18,296	5,199	251.9	366	S	S
4246	Chemical and allied products merchant wholesalers	7,174	9,626	−25.5	25,362	27,006	−6.1	91	83	9.3
4247	Petroleum and petroleum products merchant wholesalers.......	31,528	11,415	176.2	66,120	35,507	86.2	36	51	−29.5
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers...	173,474	25,040	592.8	63,417	8,642	633.8	52	109	−51.9
4249	Miscellaneous nondurable goods merchant wholesalers.........	115,225	47,821	141.0	34,478	16,822	105.0	373	278	34.2
4541	Electronic shopping and mail-order houses........................	82,380	45,207	82.2	2,486	667	272.9	869	748	16.2
45431	Fuel dealers..	6,380	1,125	466.9	7,523	1,689	345.4	S	19	S
4931[4]	Warehousing and storage..	379,481	209,894	80.8	109,450	66,622	64.3	190	231	−17.7
5111	Newspaper, periodical, book, and directory publishers	247	S	S	143	S	S	S	S	S
551114	Corporate, subsidiary, and regional managing offices................	93,461	33,712	177.2	19,112	10,369	84.3	251	743	−66.2

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] NAICS codes shown are those covered in the Commodity Flow Survey. NAICS is the North American Industry Classification System.

[3] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[4] For tabulation and publication purposes, NAICS 484 is grouped with NAICS 4931.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table T7.

Shipment Characteristics of Temperature Controlled[1] Shipments by Origin State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Origin state	Value (in millions of dollars)	Weight (in thousands of tons)	Average distance (GCD) per shipment (2022 miles)[2]
Total	2,992,166	1,237,954	290
Alabama	54,567	15,614	55
Alaska	7,685	S	S
Arizona	42,485	16,215	155
Arkansas	33,481	13,553	135
California	332,336	217,267	725
Colorado	51,616	21,814	133
Connecticut	25,607	9,314	66
Delaware	S	4,908	S
District of Columbia	849	180	S
Florida	130,825	48,083	313
Georgia	102,114	34,348	139
Hawaii	5,961	1,366	1,280
Idaho	22,868	15,543	454
Illinois	142,454	66,428	243
Indiana	S	35,027	349
Iowa	40,880	22,782	221
Kansas	51,560	13,642	192
Kentucky	41,739	16,215	173
Louisiana	26,051	18,872	123
Maine	12,323	4,422	281
Maryland	44,136	16,116	69
Massachusetts	50,345	14,616	110
Michigan	69,766	23,352	174
Minnesota	86,731	31,892	217
Mississippi	20,882	11,504	62
Missouri	50,190	25,980	443
Montana	2,758	2,406	226
Nebraska	41,237	25,772	783
Nevada	11,516	3,016	76
New Hampshire	9,312	3,115	650
New Jersey	92,198	23,190	160
New Mexico	8,744	3,163	174
New York	150,927	47,732	S
North Carolina	103,706	41,628	204
North Dakota	10,103	8,827	168
Ohio	114,047	42,299	197
Oklahoma	20,134	6,932	70
Oregon	71,483	16,463	391
Pennsylvania	115,522	39,380	297
Rhode Island	3,462	642	S
South Carolina	20,488	8,647	63
South Dakota	8,784	2,556	180
Tennessee	54,405	14,904	74
Texas	298,937	102,180	156
Utah	79,531	14,392	418
Vermont	4,810	1,678	395
Virginia	48,734	42,193	128
Washington	56,282	21,186	343
West Virginia	6,369	2,349	67
Wisconsin	84,232	28,975	400
Wyoming	2,341	S	164

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table T8.
Shipment Characteristics of Temperature Controlled[1] Shipments by Destination State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Destination state	Value (in millions of dollars)	Weight (in thousands of tons)	Average distance (GCD) per shipment (2022 miles)[2]
Total	2,992,166	1,237,954	290
Alabama	34,947	21,496	162
Alaska	7,531	S	851
Arizona	49,372	24,698	215
Arkansas	33,008	14,541	349
California	309,699	180,919	273
Colorado	49,812	23,688	183
Connecticut	29,218	11,351	197
Delaware	5,976	2,197	S
District of Columbia	3,199	814	394
Florida	148,679	56,480	746
Georgia	96,127	43,458	272
Hawaii	6,120	1,571	785
Idaho	27,534	10,038	454
Illinois	166,294	75,114	196
Indiana	88,210	26,320	236
Iowa	39,369	23,378	230
Kansas	25,060	9,812	312
Kentucky	42,396	13,294	264
Louisiana	38,835	16,116	231
Maine	12,526	4,211	S
Maryland	42,111	15,432	245
Massachusetts	50,402	15,105	279
Michigan	95,643	32,063	315
Minnesota	78,874	29,614	288
Mississippi	31,218	7,565	148
Missouri	60,730	27,535	230
Montana	11,891	3,330	345
Nebraska	20,736	13,112	422
Nevada	21,631	5,784	145
New Hampshire	8,659	3,298	199
New Jersey	93,517	31,581	272
New Mexico	12,568	3,561	319
New York	154,148	46,902	280
North Carolina	73,058	39,536	319
North Dakota	11,532	6,029	317
Ohio	128,472	50,294	272
Oklahoma	29,193	9,062	321
Oregon	49,993	14,235	287
Pennsylvania	122,459	43,865	322
Rhode Island	5,799	1,980	231
South Carolina	32,422	12,774	396
South Dakota	7,811	3,508	336
Tennessee	50,825	14,827	274
Texas	311,656	121,113	313
Utah	52,531	14,137	332
Vermont	5,496	2,372	243
Virginia	51,988	18,008	246
Washington	78,744	27,465	508
West Virginia	8,215	4,174	413
Wisconsin	67,880	25,098	185
Wyoming	8,051	S	309

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Exports Series

Table E1a.
Export Shipment Characteristics by Export Mode of Transportation: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Export mode of transportation	Value		Weight	
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
All modes...	**971,464**	**100.0**	**442,260**	**100.0**
Truck[1]...	252,796	26.0	91,121	20.6
For-hire truck..	232,144	23.9	76,872	17.4
Company-owned truck....................................	20,652	2.1	S	S
Rail...	51,946	5.3	72,899	16.5
Water...	301,335	31.0	268,032	60.6
Air (included truck and air)................................	256,523	26.4	6,549	1.5
Pipeline[2]...	S	S	74	Z
Parcel, U.S. Postal Service, or courier........................	106,036	10.9	1,624	0.4

S Withheld because estimate did not meet publication standards.
Z Rounds to zero.
[1] "Truck" as a single mode includes shipments that were made by only company-owned truck or only for-hire truck.
[2] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).
Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E1b.
Export Shipment Characteristics by Export Mode of Transportation: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Export mode of transportation	Value			Weight		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change
All modes..................................	**971,464**	**1,074,356**	**−9.6**	**442,260**	**582,574**	**−24.1**
Truck[1].......................................	252,796	209,690	20.6	91,121	71,866	26.8
For-hire truck.................................	232,144	194,513	19.3	76,872	64,406	19.4
Company-owned truck..........................	20,652	15,177	36.1	S	7,460	S
Rail...	51,946	35,694	45.5	72,899	76,324	−4.5
Water...	301,335	369,335	−18.4	268,032	427,625	−37.3
Air (included truck and air)......................	256,523	337,379	−24.0	6,549	5,880	11.4
Pipeline[2].....................................	S	S	S	74	S	S
Parcel, U.S. Postal Service, or courier..............	106,036	122,257	−13.3	1,624	878	85.0

S Withheld because estimate did not meet publication standards.
[1] "Truck" as a single mode includes shipments that were made by only company-owned truck or only for-hire truck.
[2] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).
Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E2a.
Export Shipment Characteristics by Domestic Mode of Transportation: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Domestic mode of transportation	Value		Weight	
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
All modes...................................	**971,464**	**100.0**	**442,260**	**100.0**
Single modes.................................	**763,642**	**78.6**	**380,449**	**86.0**
Truck......................................	591,955	60.9	163,571	37.0
For-hire truck	557,587	57.4	145,725	33.0
Company-owned truck	34,368	3.5	S	S
Rail.......................................	49,608	5.1	99,370	22.5
Water	60,877	6.3	115,942	26.2
Inland water.............................	S	S	S	S
Great Lakes	58	Z	S	S
Deep sea.................................	59,771	6.2	108,143	24.5
Multiple waterways.......................	S	S	S	S
Air (includes truck and air)	61,202	6.3	1,495	0.3
Pipeline[1]	1	Z	71	Z
Multiple modes	**189,308**	**19.5**	**53,708**	**12.1**
Parcel, U.S. Postal Service, or courier	133,173	13.7	1,670	0.4
Truck and rail..............................	34,431	3.5	21,409	4.8
Truck and water	19,321	2.0	7,753	1.8
Rail and water..............................	1,928	0.2	22,744	5.1
Other multiple modes[2]	455	Z	133	Z
Unknown modes[3]..............................	**18,513**	**1.9**	**8,102**	**1.8**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[2] "Other multiple modes" represent shipments with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[3] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E2b.
Export Shipment Characteristics by Domestic Mode of Transportation: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Domestic mode of transportation	Value			Weight		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change
All modes	**971,464**	**1,074,356**	**–9.6**	**442,260**	**582,574**	**–24.1**
Single modes.	**763,642**	**654,863**	**16.6**	**380,449**	**346,001**	**10.0**
Truck	591,955	209,473	182.6	163,571	71,870	127.6
For-hire truck	557,587	199,414	N	145,725	65,509	N
Company-owned truck.	34,368	10,059	N	S	6,361	N
Rail.	49,608	31,171	59.1	99,370	72,431	37.2
Water	60,877	76,578	–20.5	115,942	195,818	–40.8
Inland water	S	S	S	S	S	S
Great Lakes.	58	S	S	S	S	S
Deep sea	59,771	71,610	–16.5	108,143	176,748	–38.8
Multiple waterways	S	4,961	S	S	18,605	S
Air (includes truck and air)	61,202	337,641	–81.9	1,495	5,882	–74.6
Pipeline[1].	1	S	S	71	S	S
Multiple modes	**189,308**	**419,493**	**–54.9**	**53,708**	**236,574**	**–77.3**
Parcel, U.S. Postal Service, or courier.	133,173	122,247	8.9	1,670	878	90.2
Truck and rail	34,431	4,523	661.3	21,409	3,893	450.0
Truck and water.	19,321	232,981	–91.7	7,753	101,044	–92.3
Rail and water	1,928	42,335	–95.4	22,744	122,584	–81.4
Other multiple modes[2].	455	17,408	–97.4	133	8,175	–98.4
Unknown modes[3]	**18,513**	**N**	**N**	**8,102**	**N**	**N**

N Not available or comparable.

S Withheld because estimate did not meet publication standards.

[1] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[2] "Other multiple modes" represent shipments with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[3] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E3.
Export Shipment Characteristics by Selected Domestic Mode Share: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Domestic mode to Port of Exit (POE)[1]	Value		Weight	
	2022 dollars (in millions)	Percent of export mode total	2022 tons (in thousands)	Percent of export mode total
Water export mode total.	**301,335**	**100.0**	**268,032**	**100.0**
Truck	186,681	62.0	67,864	25.3
Rail.	15,302	5.1	34,892	13.0
Truck and rail	11,926	4.0	13,078	4.9
Water.	60,877	20.2	115,942	43.3
Truck and water.	14,869	4.9	7,478	2.8
Rail and water	1,928	0.6	22,744	8.5
Air export mode total	**256,523**	**100.0**	**6,549**	**100.0**
Truck	156,597	61.0	4,669	71.3
Air (including truck and air)	60,615	23.6	1,476	22.5
Rail export mode total.	**51,946**	**100.0**	**72,899**	**100.0**
Rail.	34,248	65.9	64,425	88.4
Truck and rail	17,184	33.1	7,966	10.9

[1] Listed under each export mode total row are the domestic modes used for transportation to the Port of Exit (POE).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E4a.

Export Shipment Characteristics by Destination: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Destination	Value		Weight	
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
Total	**971,464**	**100.0**	**442,260**	**100.0**
Canada	238,090	24.5	112,135	25.4
Mexico	142,614	14.7	104,343	23.6
Rest of Americas	87,352	9.0	38,854	8.8
Europe and Africa	186,826	19.2	53,912	12.2
Asia and Oceania	316,581	32.6	133,015	30.1

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E4b.

Export Shipment Characteristics by Destination: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Destination	Value			Weight		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change
Total	**971,464**	**1,074,356**	**−9.6**	**442,260**	**582,574**	**−24.1**
Canada	238,090	207,365	14.8	112,135	102,392	9.5
Mexico	142,614	114,716	24.3	104,343	99,978	4.4
Rest of Americas	87,352	115,289	−24.2	38,854	80,789	−51.9
Europe and Africa	186,826	246,554	−24.2	53,912	87,413	−38.3
Asia and Oceania	316,581	390,432	−18.9	133,015	212,003	−37.3

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E5a.

Export Shipment Characteristics by Export Mode of Transportation and Destination: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Export mode of transportation and destination	Value		Weight	
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
Total..	**971,464**	**100.0**	**442,260**	**100.0**
Canada				
All modes......................................	**238,090**	**100.0**	**112,135**	**100.0**
Truck[1]...	167,829	70.5	55,644	49.6
For-hire truck.................................	160,493	67.4	53,526	47.7
Company-owned truck...........................	7,336	3.1	2,118	1.9
Rail...	29,598	12.4	31,282	27.9
Water...	1,738	0.7	24,287	21.7
Air (included truck and air)...................	10,859	4.6	321	0.3
Pipeline[2].......................................	S	S	74	0.1
Parcel, U.S. Postal Service, or courier.......	28,044	11.8	522	0.5
Mexico				
All modes......................................	**142,614**	**100.0**	**104,343**	**100.0**
Truck[1]...	84,966	59.6	35,477	34.0
For-hire truck.................................	71,651	50.2	23,346	22.4
Company-owned truck...........................	S	S	S	S
Rail...	22,348	15.7	41,616	39.9
Water...	19,428	13.6	25,167	24.1
Air (included truck and air)...................	7,348	5.2	72	0.1
Pipeline[2].......................................	S	S	S	S
Parcel, U.S. Postal Service, or courier.......	5,717	4.0	54	0.1
Rest of Americas				
All modes......................................	**87,352**	**100.0**	**38,854**	**100.0**
Water...	56,280	64.4	38,134	98.1
Air (included truck and air)...................	23,556	27.0	562	1.4
Parcel, U.S. Postal Service, or courier.......	7,517	8.6	159	0.4
Europe and Africa				
All modes......................................	**186,826**	**100.0**	**53,912**	**100.0**
Water...	70,717	37.9	50,216	93.1
Air (included truck and air)...................	85,800	45.9	3,271	6.1
Parcel, U.S. Postal Service, or courier.......	30,309	16.2	425	0.8
Asia and Oceania				
All modes......................................	**316,581**	**100.0**	**133,015**	**100.0**
Water...	153,173	48.4	130,228	97.9
Air (included truck and air)...................	128,959	40.7	2,323	1.7
Parcel, U.S. Postal Service, or courier.......	34,450	10.9	463	0.3

S Withheld because estimate did not meet publication standards.

[1] "Truck" as a single mode includes shipments that were made by only company-owned truck or only for-hire truck.

[2] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E5b.

Export Shipment Characteristics by Export Mode of Transportation and Destination: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Export mode of transportation and destination	Value			Weight		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change
Total	**971,464**	**1,074,356**	**−9.6**	**442,260**	**582,574**	**−24.1**
Canada						
All modes	**238,090**	**207,365**	**14.8**	**112,135**	**102,392**	**9.5**
Truck[1]	167,829	138,318	21.3	55,644	46,480	19.7
For-hire truck.	160,493	131,270	22.3	53,526	41,769	28.1
Company-owned truck	7,336	7,048	4.1	2,118	4,711	−55.0
Rail.	29,598	22,745	30.1	31,282	39,416	−20.6
Water	1,738	2,729	−36.3	24,287	15,082	61.0
Air (included truck and air)	10,859	18,529	−41.4	321	1,130	−71.6
Pipeline[2]	S	S	S	74	S	S
Parcel, U.S. Parcel Service, or courier	28,044	25,044	12.0	522	284	84.0
Mexico						
All modes	**142,614**	**114,716**	**24.3**	**104,343**	**99,978**	**4.4**
Truck[1]	84,966	71,373	19.0	35,477	25,387	39.7
For-hire truck.	71,651	63,243	13.3	23,346	22,638	3.1
Company-owned truck	S	8,130	S	S	2,749	S
Rail.	22,348	12,949	72.6	41,616	36,908	12.8
Water	19,428	16,002	21.4	25,167	36,890	−31.8
Air (included truck and air)	7,348	8,785	−16.3	72	750	−90.4
Pipeline[2]	S	S	S	S	S	S
Parcel, U.S. Parcel Service, or courier	5,717	5,609	1.9	54	43	26.3
Rest of Americas						
All modes	**87,352**	**115,289**	**−24.2**	**38,854**	**80,789**	**−51.9**
Water	56,280	74,443	−24.4	38,134	79,840	−52.2
Air (included truck and air)	23,556	30,711	−23.3	562	868	−35.3
Parcel, U.S. Postal Service, or courier	7,517	10,135	−25.8	159	81	97.5
Europe and Africa						
All modes	**186,826**	**246,554**	**−24.2**	**53,912**	**87,413**	**−38.3**
Water	70,717	101,684	−30.5	50,216	86,063	−41.7
Air (included truck and air)	85,800	113,371	−24.3	3,271	1,217	168.8
Parcel, U.S. Postal Service, or courier	30,309	31,499	−3.8	425	133	220.9
Asia and Oceania						
All modes	**316,581**	**390,432**	**−18.9**	**133,015**	**212,003**	**−37.3**
Water	153,173	174,477	−12.2	130,228	209,750	−37.9
Air (included truck and air)	128,959	165,983	−22.3	2,323	1,915	21.3
Parcel, U.S. Postal Service, or courier	34,450	49,972	−31.1	463	338	37.0

S Withheld because estimate did not meet publication standards.

[1] "Truck" as a single mode includes shipments that were made by only company-owned truck or only for-hire truck.

[2] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Export Shipment Characteristics by Two-Digit Commodity: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight	
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
	All commodities[1]	**971,464**	**100.0**	**442,260**	**100.0**
01	Live animals and live fish..	S	S	S	S
02	Cereal grains (includes seed)..	18,349	1.9	60,229	13.6
03	Agricultural products (excludes animal feed, cereal grains, and forage products)	31,045	3.2	37,518	8.5
04	Animal feed, eggs, honey, and other products of animal origin..............	7,378	0.8	13,734	3.1
05	Meat, poultry, fish, seafood, and their preparations	25,189	2.6	S	S
06	Milled grain products and preparations and bakery products................	5,055	0.5	4,769	1.1
07	Other prepared foodstuffs and fats and oils...........................	20,155	2.1	14,044	3.2
08	Alcoholic beverages, and denatured alcohol	4,087	0.4	2,172	0.5
09	Tobacco products...	1,457	0.1	204	Z
10	Monumental or building stone	34	Z	66	Z
11	Natural sands..	307	Z	8,187	1.9
12	Gravel and crushed stone (excludes dolomite and slate)...................	172	Z	S	S
13	Other nonmetallic minerals, not elsewhere classified	1,312	0.1	3,319	0.8
14	Metallic ores and concentrates	6,344	0.7	24,166	5.5
15	Coal	7,612	0.8	38,921	8.8
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)	9,866	1.0	9,594	2.2
18	Fuel oils (includes diesel, Bunker C, and biodiesel)......................	14,562	1.5	15,411	3.5
19	Other coal and petroleum products, not elsewhere classified	16,887	1.7	25,498	5.8
20	Basic chemicals..	34,713	3.6	28,461	6.4
21	Pharmaceutical products	53,721	5.5	3,017	0.7
22	Fertilizers	S	S	S	S
23	Chemical products and preparations, not elsewhere classified	39,038	4.0	5,987	1.4
24	Plastics and rubber...	45,134	4.6	15,785	3.6
25	Logs and other wood in the rough	S	S	S	S
26	Wood products	7,848	0.8	8,176	1.8
27	Pulp, newsprint, paper, and paperboard	8,054	0.8	8,877	2.0
28	Paper or paperboard articles	4,025	0.4	1,934	0.4
29	Printed products...	3,733	0.4	S	S
30	Textiles, leather, and articles of textiles or leather......................	18,500	1.9	2,203	0.5
31	Nonmetallic mineral products	7,954	0.8	13,272	3.0
32	Base metal in primary or semifinished forms and in finished basic shapes	26,572	2.7	10,561	2.4
33	Articles of base metal	22,789	2.3	3,405	0.8
34	Machinery...	81,159	8.4	4,883	1.1
35	Electronic and other electrical equipment and components and office equipment..	157,889	16.3	5,162	1.2
36	Motorized and other vehicles (including parts)	98,471	10.1	10,770	2.4
37	Transportation equipment, not elsewhere classified.......................	60,411	6.2	1,650	0.4
38	Precision instruments and apparatus	68,733	7.1	2,239	0.5
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	6,595	0.7	698	0.2
40	Miscellaneous manufactured products.................................	26,964	2.8	3,764	0.9
41	Waste and scrap	17,689	1.8	23,340	5.3
43	Mixed freight	8,712	0.9	2,218	0.5

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: SCTG is Standard Classification of Transported Goods. Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E6b.
Export Shipment Characteristics by Two-Digit Commodity: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value			Weight		
		2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change
	All commodities[1]	971,464	1,074,356	−9.6	442,260	582,574	−24.1
01	Live animals and live fish........................	S	174	S	S	44	S
02	Cereal grains (includes seed).....................	18,349	15,090	21.6	60,229	88,880	−32.2
03	Agricultural products (excludes animal feed, cereal grains, and forage products)	31,045	26,859	15.6	37,518	42,628	−12.0
04	Animal feed, eggs, honey, and other products of animal origin.................................	7,378	7,380	0.0	13,734	10,650	29.0
05	Meat, poultry, fish, seafood, and their preparations...................................	25,189	13,540	86.0	S	5,104	S
06	Milled grain products and preparations and bakery products	5,055	4,252	18.9	4,769	4,967	−4.0
07	Other prepared foodstuffs and fats and oils.......	20,155	13,799	46.1	14,044	12,453	12.8
08	Alcoholic beverages, and denatured alcohol	4,087	4,453	−8.2	2,172	2,380	−8.7
09	Tobacco products...............................	1,457	1,046	39.3	204	80	153.5
10	Monumental or building stone	34	133	−74.7	66	135	−51.2
11	Natural sands..................................	307	548	−44.1	8,187	10,775	−24.0
12	Gravel and crushed stone (excludes dolomite and slate)	172	81	113.3	S	2,024	S
13	Other nonmetallic minerals, not elsewhere classified	1,312	1,878	−30.1	3,319	8,754	−62.1
14	Metallic ores and concentrates	6,344	11,217	−43.4	24,166	16,971	42.4
15	Coal	7,612	6,293	21.0	38,921	87,867	−55.7
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)	9,866	11,376	−13.3	9,594	21,646	−55.7
18	Fuel oils (includes diesel, Bunker C, and biodiesel)	14,562	22,122	−34.2	15,411	34,358	−55.1
19	Other coal and petroleum products, not elsewhere classified	16,887	8,276	104.0	25,498	20,269	25.8
20	Basic chemicals................................	34,713	36,252	−4.2	28,461	25,822	10.2
21	Pharmaceutical products	53,721	52,882	1.6	3,017	1,023	194.9
22	Fertilizers	S	2,646	S	S	8,682	S
23	Chemical products and preparations, not elsewhere classified	39,038	43,278	−9.8	5,987	11,760	−49.1
24	Plastics and rubber.............................	45,134	44,184	2.2	15,785	17,144	−7.9
25	Logs and other wood in the rough	S	830	S	S	2,445	S
26	Wood products.................................	7,848	6,291	24.7	8,176	12,171	−32.8
27	Pulp, newsprint, paper, and paperboard	8,054	9,679	−16.8	8,877	12,830	−30.8
28	Paper or paperboard articles	4,025	3,215	25.2	1,934	3,382	−42.8
29	Printed products...............................	3,733	3,706	0.7	S	515	S
30	Textiles, leather, and articles of textiles or leather..	18,500	22,404	−17.4	2,203	3,463	−36.4
31	Nonmetallic mineral products	7,954	8,941	−11.0	13,272	9,119	45.5
32	Base metal in primary or semifinished forms and in finished basic shapes	26,572	27,936	−4.9	10,561	13,815	−23.6
33	Articles of base metal	22,789	20,834	9.4	3,405	6,693	−49.1
34	Machinery.....................................	81,159	102,872	−21.1	4,883	7,180	−32.0
35	Electronic and other electrical equipment and components and office equipment	157,889	167,526	−5.8	5,162	4,211	22.6
36	Motorized and other vehicles (including parts)	98,471	120,298	−18.1	10,770	13,338	−19.3
37	Transportation equipment, not elsewhere classified	60,411	100,648	−40.0	1,650	619	166.4
38	Precision instruments and apparatus	68,733	64,774	6.1	2,239	1,173	90.9
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs....	6,595	6,436	2.5	698	792	−11.8
40	Miscellaneous manufactured products............	26,964	50,335	−46.4	3,764	2,484	51.5
41	Waste and scrap	17,689	18,548	−4.6	23,340	50,027	−53.3
43	Mixed freight	8,712	11,323	−23.1	2,218	3,900	−43.1

S Withheld because estimate did not meet publication standards.
[1] Estimates exclude shipments of crude petroleum (SCTG 16).
Note: SCTG is Standard Classification of Transported Goods. Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E7.

Export Shipment Characteristics by NAICS[1]: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

NAICS code	NAICS description	Value (in millions of dollars)	Weight (in thousands of tons)
	Total..	**971,464**	**442,260**
212	Mining (except oil and gas)...	16,083	82,942
31-33	Manufacturing..	583,413	179,363
311	Food manufacturing..	35,886	22,941
312	Beverage and tobacco product manufacturing.................................	6,197	3,307
313	Textile mills..	3,613	743
314	Textile product mills..	1,090	177
315	Apparel manufacturing..	580	S
316	Leather and allied product manufacturing.....................................	517	181
321	Wood product manufacturing..	4,043	5,396
322	Paper manufacturing..	11,483	10,086
323	Printing and related support activities..	2,140	S
324	Petroleum and coal products manufacturing...................................	35,998	45,404
325	Chemical manufacturing...	113,584	48,269
326	Plastics and rubber products manufacturing...................................	18,879	3,904
327	Nonmetallic mineral product manufacturing...................................	8,006	8,505
331	Primary metal manufacturing...	21,440	8,697
332	Fabricated metal product manufacturing......................................	21,385	3,696
333	Machinery manufacturing..	64,397	4,100
334	Computer and electronic product manufacturing...............................	78,936	1,311
335	Electrical equipment, appliance, and component manufacturing.................	19,047	1,438
336	Transportation equipment manufacturing......................................	117,625	8,982
337	Furniture and related product manufacturing..................................	1,920	371
339	Miscellaneous manufacturing...	16,645	898
42	Wholesale trade...	313,183	168,724
423	Merchant wholesalers, durable goods..	208,248	45,812
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers.....	15,536	2,058
4232	Furniture and home furnishing merchant wholesalers........................	2,791	676
4233	Lumber and other construction materials merchant wholesalers..............	3,236	S
4234	Professional and commercial equipment and supplies merchant wholesalers...	53,334	1,403
4235	Metal and mineral (except petroleum) merchant wholesalers.................	6,931	1,454
4236	Household appliances and electrical and electronic goods merchant wholesalers...	57,685	2,862
4237	Hardware, and plumbing and heating equipment and supplies merchant wholesalers...	3,423	259
4238	Machinery, equipment, and supplies merchant wholesalers..................	35,375	2,118
4239	Miscellaneous durable goods merchant wholesalers.........................	29,939	27,654
424	Merchant wholesalers, nondurable goods.....................................	104,935	122,911
4241	Paper and paper product merchant wholesalers............................	S	S
4242	Drugs and druggists' sundries merchant wholesalers.......................	13,625	581
4243	Apparel, piece goods, and notions merchant wholesalers...................	2,932	317
4244	Grocery and related product merchant wholesalers.........................	23,094	S
4245	Farm product raw material merchant wholesalers..........................	42,488	91,210
4246	Chemical and allied products merchant wholesalers........................	8,759	4,136
4247	Petroleum and petroleum products merchant wholesalers...................	4,725	5,118
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers...........	251	85
4249	Miscellaneous nondurable goods merchant wholesalers.....................	6,678	5,428
4541	Electronic shopping and mail-order houses...................................	24,943	1,200
45431	Fuel dealers...	S	S
4931[2]	Warehousing and storage..	23,506	4,636
5111	Newspaper, periodical, book, and directory publishers........................	200	11
551114	Corporate, subsidiary, and regional managing offices..........................	10,127	5,376

S Withheld because estimate did not meet publication standards.

[1] NAICS is North American Industry Classification System. NAICS codes shown are those covered in the Commodity Flow Survey.

[2] For tabulation and publication purposes, NAICS 484 is grouped with NAICS 4931.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table E8.

Export Shipment Characteristics by Origin State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Origin state	Value		Weight	
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
Total	**971,464**	**100.0**	**442,260**	**100.0**
Alabama.	15,481	1.6	8,633	2.0
Alaska.	3,560	0.4	1,106	0.3
Arizona.	13,924	1.4	1,628	0.4
Arkansas	4,786	0.5	3,758	0.8
California	167,344	17.2	40,515	9.2
Colorado	6,072	0.6	880	0.2
Connecticut.	14,331	1.5	1,804	0.4
Delaware	1,556	0.2	S	S
District of Columbia	S	S	1	Z
Florida	37,833	3.9	5,455	1.2
Georgia	14,772	1.5	5,003	1.1
Hawaii.	528	0.1	192	Z
Idaho.	2,048	0.2	842	0.2
Illinois.	45,461	4.7	20,939	4.7
Indiana	27,836	2.9	4,812	1.1
Iowa	15,838	1.6	11,624	2.6
Kansas	8,850	0.9	4,079	0.9
Kentucky	15,299	1.6	5,391	1.2
Louisiana	35,508	3.7	73,594	16.6
Maine	3,384	0.3	1,262	0.3
Maryland	4,244	0.4	742	0.2
Massachusetts	26,228	2.7	987	0.2
Michigan.	36,138	3.7	13,430	3.0
Minnesota	24,319	2.5	28,363	6.4
Mississippi	5,246	0.5	2,281	0.5
Missouri	10,337	1.1	3,096	0.7
Montana.	3,709	0.4	S	S
Nebrasaka	6,731	0.7	S	S
Nevada.	3,765	0.4	552	0.1
New Hampshire	5,444	0.6	S	S
New Jersey	24,333	2.5	5,606	1.3
New Mexico.	2,163	0.2	S	S
New York.	31,527	3.2	8,999	2.0
North Carolina	32,659	3.4	4,203	1.0
North Dakota	2,560	0.3	4,187	0.9
Ohio	32,468	3.3	9,213	2.1
Oklahoma	3,176	0.3	1,209	0.3
Oregon.	12,495	1.3	2,069	0.5
Pennsylvania.	25,244	2.6	6,224	1.4
Rhode Island.	2,147	0.2	592	0.1
South Carolina	11,267	1.2	4,010	0.9
South Dakota	1,017	0.1	1,051	0.2
Tennessee	22,745	2.3	3,925	0.9
Texas.	101,685	10.5	76,969	17.4
Utah	10,151	1.0	1,485	0.3
Vermont.	2,391	0.2	592	0.1
Virginia.	12,635	1.3	8,571	1.9
Washington.	51,609	5.3	13,376	3.0
West Virginia.	5,430	0.6	20,701	4.7
Wisconsin	21,802	2.2	7,058	1.6
Wyoming.	1,076	0.1	6,162	1.4

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Hazardous Materials Series

Table H1a.

Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Mode of transportation	Value		Weight		Average distance[1] (GCD) per shipment (2022 miles)
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
All modes	**2,147,421**	**100.0**	**2,590,077**	**100.0**	**207**
Single modes	**2,034,386**	**94.7**	**2,470,463**	**95.4**	**66**
Truck[2]	1,180,593	55.0	1,307,926	50.5	56
For-hire truck	597,013	27.8	633,426	24.5	171
Company-owned truck	356,663	16.6	432,637	16.7	32
Customer pick-up[3]	226,917	10.6	241,863	9.3	29
Rail	163,106	7.6	247,046	9.5	493
Water	112,341	5.2	137,550	5.3	92
Inland water.	44,223	2.1	54,835	2.1	50
Great Lakes	S	S	S	S	S
Deep sea.	68,118	3.2	82,715	3.2	185
Multiple waterways.	S	S	S	S	S
Air (includes truck and air)	S	S	S	S	1,178
Pipeline[4]	573,559	26.7	777,815	30.0	S
Other single modes[5]	S	S	S	S	S
Multiple modes	**94,638**	**4.4**	**115,028**	**4.4**	**729**
Parcel, U.S. Postal Service, or courier	18,588	0.9	848	Z	731
Truck and rail.	58,701	2.7	94,969	3.7	540
Truck and water	17,193	0.8	19,126	0.7	857
Rail and water.	87	Z	49	Z	S
Other multiple modes[5]	S	S	S	S	1,373
Unknown modes[6]	**18,396**	**0.9**	**4,586**	**0.2**	**325**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck..

[3] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[4] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[5] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[6] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table H1b.

Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Survey. Estimates may not be additive because of rounding)

Mode of transportation	Value			Weight			Average distance[1] (GCD) per shipment		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
All modes	**2,147,421**	**1,680,231**	**27.8**	**2,590,077**	**2,967,965**	**−12.7**	**207**	**189**	**9.3**
Single modes	**2,034,386**	**1,612,129**	**26.2**	**2,470,463**	**2,889,521**	**−14.5**	**66**	**72**	**−8.0**
Truck[2]	1,180,593	1,091,250	8.2	1,307,926	1,814,848	−27.9	56	63	−11.0
For-hire truck	597,013	567,599	N	633,426	932,658	N	171	153	N
Company-owned truck	356,663	523,651	N	432,637	882,190	N	32	28	N
Customer pick-up[3]	226,917	N	N	241,863	N	N	29	N	N
Rail	163,106	39,040	317.8	247,046	90,387	173.3	493	640	−23.0
Water	112,341	137,109	−18.1	137,550	304,189	−54.8	92	72	28.2
Inland water	44,223	72,179	−38.7	54,835	171,346	−68.0	50	48	5.7
Great Lakes	S	S	S	S	S	S	S	S	S
Deep sea	68,118	63,134	7.9	82,715	128,806	−35.8	185	257	−27.8
Multiple waterways	S	1,796	S	S	4,036	S	S	111	S
Air (includes truck and air)	S	4,817	S	S	251	S	1,178	1,333	−11.7
Pipeline[4]	573,559	339,912	68.7	777,815	679,846	14.4	S	S	S
Other single modes[5]	S	S	S	S	S	S	S	S	S
Multiple modes	**94,638**	**68,101**	**39.0**	**115,028**	**78,444**	**46.6**	**729**	**947**	**−23.0**
Parcel, U.S. Postal Service, or courier	18,588	13,475	37.9	848	345	145.5	731	949	−23.0
Truck and rail	58,701	35,697	64.4	94,969	70,185	35.3	540	1,003	−46.2
Truck and water	17,193	16,504	4.2	19,126	6,167	210.1	857	489	75.3
Rail and water	87	1,121	−92.2	49	1,481	−96.7	S	1,465	S
Other multiple modes[5]	S	1,305	S	S	265	S	1,373	1,045	31.5
Unknown modes[6]	**18,396**	**N**	**N**	**4,586**	**N**	**N**	**325**	**N**	**N**

N Not available or comparable.

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[3] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[4] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[5] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[6] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table H2a.

Hazardous Material Shipment Characteristics by Hazard Class for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Hazard class and description	Value		Weight		Average distance[1] (GCD) per shipment (2022 miles)
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
Total..	2,147,421	100.0	2,590,077	100.0	207
Class 1, Explosives	15,937	0.7	1,654	0.1	819
Class 2, Gases	180,622	8.4	360,757	13.9	105
Class 3, Flammable and combustible liquid	1,750,731	81.5	2,019,490	78.0	159
Class 4, Flammable solid; spontaneously combustible material; dangerous when wet material..............	5,424	0.3	12,110	0.5	450
Class 5, Oxidizers and organic peroxides	10,724	0.5	11,007	0.4	547
Class 6, Toxic[2] materials and infectious substances	22,854	1.1	10,998	0.4	586
Class 7, Radioactive material	5,444	0.3	563	Z	S
Class 8, Corrosive material	74,162	3.5	107,896	4.2	297
Class 9, Miscellaneous hazardous material	81,523	3.8	65,601	2.5	638

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] The words "poison" or "poisonous" are synonymous with the word "toxic."

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Estimates exclude shipments of crude petroleum (SCTG 16).

Table H2b.

Hazardous Material Shipment Characteristics by Hazard Class for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Hazard class and description	Value			Weight			Average distance[1] (GCD) per shipment		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
Total......................	2,147,421	1,680,231	27.8	2,590,077	2,967,965	−12.7	207	189	9.3
Class 1, Explosives	15,937	14,936	6.7	1,654	3,290	−49.7	819	1,046	−21.7
Class 2, Gases	180,622	114,845	57.3	360,757	227,616	58.5	105	210	−50.1
Class 3, Flammable and combustible liquid	1,750,731	1,373,803	27.4	2,019,490	2,466,634	−18.1	159	100	58.4
Class 4, Flammable solid; spontaneously combustible material; dangerous when wet material...............	5,424	5,308	2.2	12,110	28,210	−57.1	450	478	−5.8
Class 5, Oxidizers and organic peroxides..........	10,724	9,753	10.0	11,007	14,978	−26.5	547	204	167.7
Class 6, Toxic[2] materials and infectious ubstances ...	22,854	13,298	71.9	10,998	6,358	73.0	586	828	−29.3
Class 7, Radioactive material...................	5,444	6,945	−21.6	563	427	31.7	S	63	S
Class 8, Corrosive material ...	74,162	79,322	−6.5	107,896	151,007	−28.5	297	273	9.0
Class 9, Miscellaneous hazardous material.........	81,523	62,020	31.4	65,601	69,444	−5.5	638	944	−32.4

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Estimates exclude shipments of crude petroleum (SCTG 16).

Table H3.

Hazardous Material Shipment Characteristics by Hazard Division for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Hazard division and description	Value		Weight		Average distance[1] (GCD) per shipment (2022 miles)
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
Total	**2,147,421**	**100.0**	**2,590,077**	**100.0**	**207**
Division 1.1, Explosives with a mass explosion hazard	1,608	0.1	130	Z	337
Division 1.2, Explosives with a projection hazard	S	S	S	S	509
Division 1.3, Explosives with predominantly a fire hazard	3,043	0.1	452	Z	308
Division 1.4, Explosives with no significant blast hazard	10,369	0.5	701	Z	836
Division 1.5, Very insensitive explosives, blasting agent	527	Z	348	Z	148
Division 2.1, Flammable gas	131,374	6.1	224,310	8.7	38
Division 2.2, Nonflammable, nonpoisonous compressed gas	42,059	2.0	130,752	5.0	154
Division 2.3, Gas poisonous by inhalation	7,189	0.3	5,695	0.2	169
Division 4.1, Flammable solid	3,817	0.2	11,741	0.5	428
Division 4.2, Spontaneously combustible material	473	Z	112	Z	419
Division 4.3, Dangerous when wet material	1,134	0.1	257	Z	579
Division 5.1, Oxidizer	9,651	0.4	10,617	0.4	557
Division 5.2, Organic peroxide	1,074	Z	390	Z	289
Division 6.1, Toxic (poisonous) materials	18,015	0.8	10,993	0.4	417
Division 6.2, Infectious substances	S	S	S	S	922

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Hazard classes 3, 7, 8, and 9 are not separated into divisions and therefore not applicable to this table. Estimates exclude shipments of crude petroleum (SCTG 16).

Hazardous Material Shipment Characteristics for the Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value		Weight		Average distance[2] (GCD) per shipment (2022 miles)
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
	Total................................	**2,147,421**	**100.0**	**2,590,077**	**100.0**	**207**
	Subtotal for Selected UN/NA Numbers	**1,921,716**	**89.1**	**2,482,873**	**96.0**	**11,940**
1005	Ammonia, anhydrous...............................	13,176	0.6	S	S	206
1011	Butane refer also Petroleum gases, liquefied..........	S	S	S	S	447
1012	Butylene refer also Petroleum gases, liquefied	S	S	S	S	464
1013	Carbon dioxide.....................................	735	Z	2,447	0.1	206
1017	Chlorine	2,874	0.1	3,315	0.1	120
1038	Ethylene, refrigerated liquid (cryogenic liquid)	S	S	S	S	284
1066	Nitrogen, compressed	1,574	0.1	6,135	0.2	451
1072	Oxygen, compressed	2,953	0.1	6,693	0.3	S
1073	Oxygen, refrigerated liquid (cryogenic liquid).........	2,492	0.1	24,999	1.0	39
1075	Petroleum gases, liquefied or liquefied petroleum gas	52,019	2.4	81,052	3.1	38
1077	Propylene see also Petroleum gases, liquefied	6,308	0.3	S	S	455
1114	Benzene...	S	S	S	S	185
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions..................................	26,689	1.2	33,631	1.3	125
1179	Ethyl butyl ether	S	S	S	S	S
1202	Diesel fuel, including gas oil or heating oil, light	157,171	7.3	174,241	6.7	36
1203	Gasoline includes gasoline mixed with ethyl .... alcohol, with not more than 10% alcohol.............	767,303	35.7	885,567	34.2	28
1223	Kerosene	4,558	0.2	4,356	0.2	43
1267	Petroleum crude oil.................................	S	S	S	S	39
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s..	29,801	1.4	39,361	1.5	154
1270	Petroleum oil......................................	3,878	0.2	6,191	0.2	164
1307	Xylenes...	6,198	0.3	10,061	0.4	357
1789	Hydrochloric acid...................................	2,792	0.1	8,326	0.3	282
1791	Hypochlorite solutions	6,336	0.3	14,842	0.6	87
1814	Potassium hydroxide, solution	1,767	0.1	1,846	0.1	409
1824	Sodium hydroxide solution	12,328	0.6	26,079	1.0	334
1830	Sulfuric acid with more than 51% acid	4,840	0.2	20,510	0.8	358
1845	Carbon dioxide, solid or dry ice	4,218	0.2	3,872	0.1	244
1863	Fuel, aviation, turbine engine........................	83,314	3.9	94,879	3.7	27
1866	Resin solution, flammable...........................	5,968	0.3	1,536	0.1	381
1918	Isopropylbenzene	1,729	0.1	1,914	0.1	178
1951	Argon, refrigerated liquid (cryogenic liquid)	2,739	0.1	5,532	0.2	47
1962	Ethylene...	9,396	0.4	18,152	0.7	S
1971	Methane, compressed or Natural gas, compressed (with high methane content)......................	1,849	0.1	7,978	0.3	681
1977	Nitrogen, refrigerated liquid cryogenic liquid	4,545	0.2	46,991	1.8	41
1978	Propane, refer also petroleum gases, liquefied	20,146	0.9	28,113	1.1	23
1987	Alcohols, n.o.s., including denatured alcohol..........	27,996	1.3	36,601	1.4	440
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s..........	471,733	22.0	529,241	20.4	40
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt.............................	20,322	0.9	52,627	2.0	72
2187	Carbon dioxide, refrigerated liquid...................	1,579	0.1	9,980	0.4	275
2312	Phenol, molten.....................................	S	S	S	S	715
2448	Sulfur, molten	2,127	0.1	10,572	0.4	120
2672	Ammonia solution, relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10% but not more than 35% ammonia	1,206	0.1	3,525	0.1	214
2693	Bisulfites, aqueous solutions, n.o.s	806	Z	3,109	0.1	183
3077	Environmentally hazardous substance, solid, n.o.s., including hazardous waste, solid, n.o.s. or other regulated substances, solid, n.o.s.	16,267	0.8	4,986	0.2	439

Footnotes available at end of table.

Table H4.

Hazardous Material Shipment Characteristics for the Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value		Weight		Average distance[2] (GCD) per shipment (2022 miles)
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s.	26,358	1.2	28,160	1.1	442
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.)	15,816	0.7	25,403	1.0	138
3264	Corrosive liquid, acidic, inorganic, n.o.s.	2,398	0.1	4,095	0.2	436
3295	Hydrocarbons, liquid, n.o.s	1,896	0.1	2,186	0.1	355
3334	Aviation regulated liquid, n.o.s., including self-defense spray, nonpressurized, or pepper spray	S	S	S	S	544
3475	Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture, with more than 10% ethanol.	15,722	0.7	19,996	0.8	265

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Estimates exclude shipments of crude petroleum (SCTG 16).

Table H5.

Hazardous Versus Nonhazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Mode of transportation	Weight				
	Total tons (in thousands)	Hazardous		Nonhazardous	
		2022 tons (in thousands)	Percent of total	2022 tons (in thousands)	Percent of total
All modes	**12,169,793**	**2,590,077**	**21.3**	**9,579,716**	**78.7**
Single modes	**11,031,128**	**2,470,463**	**22.4**	**8,560,665**	**77.6**
Truck[1]	8,293,501	1,307,926	15.8	6,985,574	84.2
For-hire truck	3,909,476	633,426	16.2	3,276,050	83.8
Company-owned truck	2,994,372	432,637	14.4	2,561,735	85.6
Customer pick-up[2]	1,389,653	241,863	17.4	1,147,790	82.6
Rail	1,456,515	247,046	17.0	1,209,470	83.0
Water	435,378	137,550	31.6	297,829	68.4
Inland water	232,571	54,835	23.6	177,736	76.4
Great Lakes	47,058	S	S	47,058	100.0
Deep sea	155,749	82,715	53.1	73,034	46.9
Air (includes truck and air)	5,212	S	S	5,085	97.6
Pipeline[3]	799,759	777,815	97.3	21,944	2.7
Other single modes[4]	40,763	S	S	40,763	100.0
Multiple modes	**1,036,960**	**115,028**	**11.1**	**921,932**	**88.9**
Parcel, U.S. Postal Service, or courier	61,657	848	1.4	60,809	98.6
Truck and rail	841,574	94,969	11.3	746,605	88.7
Truck and water	96,037	19,126	19.9	76,911	80.1
Rail and water	36,165	49	0.1	36,116	99.9
Other multiple modes[4]	S	S	S	S	S
Unknown modes[5]	**101,705**	**4,586**	**4.5**	**97,119**	**95.5**

S Withheld because estimate did not meet publication standards.

[1] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[2] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[3] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[4] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[5] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2017 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table H6.

Shipment Characteristics by Selected Commodities[1] for Hazardous Materials for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value			Weight		
		Total dollars (in millions)	Hazardous		Total tons (in thousands)	Hazardous	
			2022 dollars (in millions)	Percent of total		2022 tons (in thousands)	Percent of total
	All commodities[2]	**17,996,782**	**2,147,421**	**11.9**	**12,169,793**	**2,590,077**	**21.3**
	Subtotal for Selected Commodities	**2,842,000**	**2,036,129**	**11.3**	**3,354,589**	**2,557,692**	**21.0**
17	Gasoline, aviation turbine fuel, and ethanol, including kerosene, and fuel alcohols	893,816	893,816	100.0	1,036,594	1,036,594	100.0
18	Fuel oils including diesel, Bunker C, and biodiesel	608,250	600,984	98.8	672,918	668,152	99.3
19	Other coal and petroleum products, not elsewhere classified	435,905	250,508	57.5	869,758	414,698	47.7
20	Basic chemicals	336,097	189,607	56.4	489,838	377,876	77.1
22	Fertilizers	79,908	20,593	25.8	131,077	34,641	26.4
23	Other chemical products and preparations	488,024	80,621	16.5	154,404	25,731	16.7

[1] Commodity codes shown had the highest estimated weight without considering sampling variability. Since an "All other SCTG" line is not shown, estimates do not add to total.

[2] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Percentages represent the proportion of hazardous materials to the two-digit commodity total.

Table H7a.

Hazardous Material Shipment Characteristics by Selected Commodities[1] for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value		Weight		Average distance[2] (GCD) per shipment (2022 miles)
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
	All commodities[3]...............	**2,147,421**	**100.0**	**2,590,077**	**100.0**	**207**
	Subtotal for Selected Commodities	**2,036,129**	**94.8**	**2,557,692**	**98.7**	**1,116**
17	Gasoline, aviation turbine fuel, and ethanol, including kerosene, and fuel alcohols	893,816	41.6	1,036,594	40.0	40
18	Fuel oils including diesel, Bunker C, and biodiesel.........	600,984	28.0	668,152	25.8	28
19	Other coal and petroleum products, not elsewhere classified	250,508	11.7	414,698	16.0	70
20	Basic chemicals	189,607	8.8	377,876	14.6	172
22	Fertilizers.......................	20,593	1.0	34,641	1.3	199
23	Other chemical products and preparations...................	80,621	3.8	25,731	1.0	607

[1] Commodity codes shown had the highest estimated weight without considering sampling variability. Since an "All other SCTG" line is not shown, estimates do not add to total.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Percentages represent the proportion of hazardous materials to the two-digit commodity total.

Table H7b.

Hazardous Material Shipment Characteristics by Selected Commodities[1] for the United States: 2022 and 2017

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

SCTG code	Commodity description	Value			Weight			Average distance[2] (GCD) per shipment		
		2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change	2022 miles	2017 miles	Percent change
	All commodities[3]	**2,147,421**	**1,680,231**	**27.8**	**2,590,077**	**2,967,965**	**−12.7**	**207**	**189**	**9.3**
	Subtotal for Selected Commodities	**2,036,129**	**1,589,253**	**28.1**	**2,557,692**	**2,942,134**	**−13.1**	**1,116**	**1,131**	**−1.3**
17	Gasoline, aviation turbine fuel, and ethanol, including kerosene, and fuel alcohols.....	893,816	745,954	19.8	1,036,594	1,388,364	−25.3	40	44	−9.2
18	Fuel oils including diesel, Bunker C, and biodiesel........	600,984	466,218	28.9	668,152	896,403	−25.5	28	36	−20.7
19	Other coal and petroleum products, not elsewhere classified	250,508	126,056	98.7	414,698	259,267	59.9	70	41	68.3
20	Basic chemicals	189,607	151,563	25.1	377,876	323,970	16.6	172	127	35.4
22	Fertilizers.....................	20,593	14,581	41.2	34,641	44,200	−21.6	199	166	20.1
23	Other chemical products and preparations..............	80,621	84,881	−5.0	25,731	29,930	−14.0	607	717	−15.4

[1] Commodity codes shown had the highest estimated weight without considering sampling variability. Since an "All other SCTG" line is not shown, estimates do not add to total.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Hazardous Material Shipment Characteristics by Truck[1] for Intrastate Versus Interstate for Selected UN/NA Numbers[2] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value			Weight		
		2022 dollars (in millions)	Intrastate (percent of total)	Interstate (percent of total)	2022 tons (in thousands)	Intrastate (percent of total)	Interstate (percent of total)
	Total	**1,180,593**	**80.0**	**20.0**	**1,307,926**	**86.4**	**13.6**
	Subtotal for Selected UN/NA Numbers	**1,051,876**	**76.5**	**12.6**	**1,268,611**	**84.8**	**12.2**
1005	Ammonia, anhydrous.	11,247	70.8	29.2	9,256	69.6	30.4
1011	Butane refer also Petroleum gases, liquefied	S	S	S	S	S	S
1013	Carbon dioxide	676	74.4	25.6	1,503	77.0	23.0
1066	Nitrogen, compressed	1,272	83.4	16.6	4,330	89.3	S
1072	Oxygen, compressed	2,877	81.8	18.2	6,376	85.8	14.2
1073	Oxygen, refrigerated liquid (cryogenic liquid).	2,166	81.8	18.2	18,143	80.3	19.7
1075	Petroleum gases, liquefied or liquefied petroleum gas	29,793	77.1	22.9	37,891	73.2	26.8
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions	16,560	81.7	18.3	20,119	85.8	14.2
1202	Diesel fuel, including gas oil or heating oil, light.	59,052	87.4	12.6	61,990	88.5	11.5
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol	463,424	92.7	7.3	540,993	93.3	6.7
1219	Isopropanol or Isopropyl alcohol . . .	2,419	35.3	64.7	1,392	52.3	47.7
1223	Kerosene	1,683	93.9	6.1	1,414	94.3	5.7
1230	Methanol	1,343	61.8	38.2	1,835	61.8	38.2
1263	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, liquid lacquer base, and paint related material including paint thinning, drying, removing or reducing compound	9,238	35.9	64.1	1,820	52.2	47.8
1267	Petroleum crude oil	S	S	S	S	S	S
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s..	8,013	34.5	65.5	7,458	39.2	60.8
1270	Petroleum oil	2,194	40.1	59.9	4,519	S	57.9
1760	Corrosive liquids, n.o.s., including bis (aminopropyl) piperazine, compounds, cleaning liquid or tree killing, ferrous chloride, solution, ferrous chloride, hexanoic acid, isopentanoic acid, methyl norbornene dicarboxylic anhydride, methyl phosphonot	3,341	51.5	48.5	2,401	70.3	29.7
1789	Hydrochloric acid	2,380	68.3	31.7	6,095	76.3	23.7
1791	Hypochlorite solutions	5,747	75.1	24.9	12,851	78.7	21.3
1805	Phosphoric acid solution.	2,330	53.1	46.9	2,114	63.1	36.9
1824	Sodium hydroxide solution.	6,012	63.6	36.4	10,931	70.5	29.5
1830	Sulfuric acid with more than 51% acid	3,221	66.2	33.8	13,238	72.5	27.5
1845	Carbon dioxide, solid or dry ice	876	55.0	45.0	2,242	95.0	S
1863	Fuel, aviation, turbine engine	12,484	97.8	2.2	14,982	98.1	1.9
1866	Resin solution, flammable	5,869	46.9	53.1	1,528	47.8	52.2
1942	Ammonium nitrate, with not more than 0.2% combustible sub stances, including any organic substance calculated as carbon, to the exclusion of any other added substance	864	S	15.1	1,339	S	18.7
1951	Argon, refrigerated liquid (cryogenic liquid).	2,414	71.6	28.4	5,227	67.2	32.8

Footnotes available at end of table.

Hazardous Material Shipment Characteristics by Truck[1] for Intrastate Versus Interstate for Selected UN/NA Numbers[2] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value			Weight		
		2022 dollars (in millions)	Intrastate (percent of total)	Interstate (percent of total)	2022 tons (in thousands)	Intrastate (percent of total)	Interstate (percent of total)
1956	Compressed gas, n.o.s.	2,014	71.5	28.5	3,492	95.2	4.8
1977	Nitrogen, refrigerated liquid cryogenic liquid	4,230	82.4	17.6	34,653	85.1	14.9
1978	Propane, also refer to Petroleum gases, liquefied.	11,285	86.1	S	15,137	81.7	S
1987	Alcohols, n.o.s., including denatured alcohol	9,461	64.0	36.0	11,041	63.8	36.2
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s.	271,585	88.6	11.4	285,378	89.9	10.1
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt	11,849	S	26.0	33,164	80.6	S
2187	Carbon dioxide, refrigerated liquid.	1,471	79.7	20.3	8,808	80.3	19.7
2448	Sulfur, molten.	1,385	72.8	27.2	6,908	82.3	17.7
2672	Ammonia solution, relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10% but not more than 35% ammonia.	1,203	58.9	41.1	3,525	53.5	S
2693	Bisulfites, aqueous solutions, n.o.s.	584	66.7	33.3	1,574	65.0	35.0
2794	Batteries, wet, filled with acid, electric storage.	9,056	57.5	42.5	1,759	49.2	50.8
2924	Flammable liquids, corrosive, n.o.s.	582	47.0	53.0	S	28.7	S
3077	Environmentally hazardous substance, solid, n.o.s., including hazardous waste, solid, n.o.s. or other regulated sub-stances, solid, n.o.s	12,223	54.4	45.6	3,468	S	28.0
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s.	10,549	43.1	56.9	4,350	47.0	53.0
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.)	7,147	57.6	42.4	12,084	58.6	41.4
3264	Corrosive liquid, acidic, inorganic, n.o.s.	2,286	37.6	62.4	3,850	58.1	41.9
3475	Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture, with more than 10% ethanol	7,533	64.3	35.7	9,279	65.2	34.8

S Withheld because estimate did not meet publication standards.

[1] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[2] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. For purposes of this table, individual shipment data are classified as either completely "interstate" or completely "intrastate." All shipments with the state of destination different from the state of origin are classified as "interstate." All shipments having the state of origin the same as the state of destination are classified as "intrastate."

Hazardous Material Shipment Characteristics by Rail for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value			Weight		
		2022 dollars (in millions)	Intrastate (percent of total)	Interstate (percent of total)	2022 tons (in thousands)	Intrastate (percent of total)	Interstate (percent of total)
	Total	**163,106**	**40.9**	**59.1**	**247,046**	**42.4**	**57.6**
	Subtotal for Selected UN/NA Numbers	**151,784**	**39.4**	**53.7**	**237,410**	**41.3**	**54.8**
1005	Ammonia, anhydrous.	296	S	42.0	S	S	S
1010	Butadienes, stabilized or butadienes and hydrocarbon mixture, stabilized containing more than 40% butadienes.	S	S	S	608	45.6	54.4
1011	Butane also refer to petroleum gases, liquefied.	S	S	S	S	S	S
1013	Carbon dioxide	S	S	S	S	S	S
1017	Chlorine.	505	25.7	74.3	1,149	40.3	59.7
1040	Ethylene oxide or ethylene oxide with nitrogen up to a total pressure of 1 MPa (10 bar) at 50 degrees C.	S	S	77.0	S	S	74.2
1073	Oxygen, refrigerated liquid (cryogenic liquid).	S	S	32.0	S	S	S
1075	Petroleum gases, liquefied or liquefied petroleum gas	S	8.5	S	S	9.0	S
1077	Propylene refer also Petroleum gases, liquefied.	S	S	S	S	S	S
1086	Vinyl chloride, stabilized	602	S	83.2	660	S	81.9
1090	Acetone.	S	S	S	S	S	S
1114	Benzene	175	45.9	S	S	S	S
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions	5,411	19.9	80.1	7,511	15.2	84.8
1202	Diesel fuel, including gas oil or heating oil, light	8,100	34.2	65.8	11,074	34.6	65.4
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol.	22,086	69.7	30.3	25,458	66.6	33.4
1219	Isopropanol or Isopropyl alcohol . .	1,486	S	S	1,760	S	S
1267	Petroleum crude oil	4,793	94.3	S	6,116	91.0	S
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s..	6,767	51.6	48.4	10,993	58.4	41.6
1270	Petroleum oil	833	S	35.1	838	S	33.7
1280	Propylene oxide	S	5.6	S	S	5.5	S
1307	Xylenes	511	80.7	S	790	67.0	S
1789	Hydrochloric acid	229	18.3	81.7	1,483	47.6	52.4
1791	Hypochlorite solutions	181	27.3	72.7	812	50.3	49.7
1805	Phosphoric acid solution.	S	Z	S	S	Z	S
1814	Potassium hydroxide, solution	527	13.0	87.0	703	13.5	86.5
1824	Sodium hydroxide solution.	1,410	S	61.1	3,563	S	56.2
1830	Sulfuric acid with more than 51% acid	S	16.3	S	S	18.0	S
1863	Fuel, aviation, turbine engine	S	S	S	5,634	87.9	S
1965	Hydrocarbon gas mixture, liquefied, n.o.s.	S	S	S	S	S	S
1977	Nitrogen, refrigerated liquid cryogenic liquid	S	S	S	S	S	S
1978	Propane, also refer to petroleum gases, liquefied.	505	69.5	30.5	637	70.0	S
1987	Alcohols, n.o.s., including denatured alcohol	9,592	10.0	90.0	13,701	11.4	88.6

Footnotes available at end of table.

Table H8b.

Hazardous Material Shipment Characteristics by Rail for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value			Weight		
		2022 dollars (in millions)	Intrastate (percent of total)	Interstate (percent of total)	2022 tons (in thousands)	Intrastate (percent of total)	Interstate (percent of total)
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s.	22,859	74.5	25.5	26,263	77.9	22.1
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt.	5,620	S	62.9	12,144	S	55.2
2312	Phenol, molten	1,327	7.5	92.5	1,230	5.9	94.1
2448	Sulfur, molten.	574	S	79.1	2,653	S	80.9
3077	Environmentally hazardous substance, solid, n.o.s., including hazardous waste, solid, n.o.s. or other regulated substances, solid, n.o.s..	2,444	52.5	47.5	1,170	50.9	49.1
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s.	5,589	18.1	81.9	6,946	S	81.9
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.)	4,570	S	58.8	6,670	S	59.6
3475	Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture, with more than 10% ethanol	6,227	S	98.7	8,089	S	98.6

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2017 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. For purposes of this table, individual shipment data are classified as either completely "interstate" or completely "intrastate." All shipments with the state of destination different from the state of origin are classified as "interstate." All shipments having the state of origin the same as the state of destination are classified as "intrastate."

Table H8c.

Hazardous Material Shipment Characteristics by Water for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value			Weight		
		2022 dollars (in millions)	Intrastate (percent of total)	Interstate (percent of total)	2022 tons (in thousands)	Intrastate (percent of total)	Interstate (percent of total)
	Total	**112,341**	**77.5**	**22.5**	**137,550**	**75.8**	**24.2**
	Subtotal for Selected UN/NA Numbers	**111,962**	**77.2**	**22.5**	**137,270**	**75.7**	**24.1**
1005	Ammonia, anhydrous.	S	S	S	S	S	S
1114	Benzene	546	100.0	S	584	100.0	S
1145	Cyclohexane.	402	100.0	S	402	100.0	S
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions	S	S	S	S	S	S
1202	Diesel fuel, including gas oil or heating oil, light	S	S	S	S	S	S
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol	32,145	88.6	11.4	35,276	88.3	11.7
1223	Kerosene.	861	S	40.7	874	S	41.4
1267	Petroleum crude oil	S	S	S	S	S	S
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s..	6,101	81.5	18.5	8,385	80.0	20.0
1307	Xylenes	3,489	100.0	S	5,921	100.0	S
1593	Dichloromethane	196	S	96.6	173	S	97.2
1824	Sodium hydroxide solution.	1,762	S	31.0	5,180	S	23.3
1830	Sulfuric acid with more than 51% acid	S	S	S	S	S	S
1863	Fuel, aviation, turbine engine	3,517	87.7	S	3,300	83.2	S
1888	Chloroform.	137	S	S	164	S	S
1918	Isopropylbenzene.	957	S	48.4	1,168	S	49.0
1942	Ammonium nitrate, with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance.	S	S	S	S	S	S
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s.	26,701	72.6	S	29,852	69.2	S
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt.	S	S	S	S	S	S
2055	Styrene monomer, stabilized.	1,137	S	100.0	673	S	100.0
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s.	S	72.3	S	S	71.9	S
3256	Elevated temperature liquid, flam-mable, n.o.s., with flash point above 37.8 C, at or above its flash point.	235	100.0	S	562	100.0	S

Footnotes available at end of table.

Table H8c.

Hazardous Material Shipment Characteristics by Water for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value			Weight		
		2022 dollars (in millions)	Intrastate (percent of total)	Interstate (percent of total)	2022 tons (in thousands)	Intrastate (percent of total)	Interstate (percent of total)
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.).........................	S	S	S	S	S	S
3334	Aviation regulated liquid, n.o.s., including self-defense spray, nonpressurized, or pepper spray	S	S	S	S	S	S

S Withheld because estimate did not meet publication standards.

[1] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. For purposes of this table, individual shipment data are classified as either completely "interstate" or completely "intrastate." All shipments with the state of destination different from the state of origin are classified as "interstate." All shipments having the state of origin the same as the state of destination are classified as "intrastate."

Table H8d.

Hazardous Material Shipment Characteristics by Pipeline for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value			Weight		
		2022 dollars (in millions)	Intrastate (percent of total)	Interstate (percent of total)	2022 tons (in thousands)	Intrastate (percent of total)	Interstate (percent of total)
	Total	573,559	85.8	14.2	777,815	86.9	13.1
	Subtotal for Selected UN/NA Numbers	563,538	84.1	14.2	763,770	85.1	13.1
1005	Ammonia, anhydrous.	S	S	S	S	S	S
1011	Butane also refer to Petroleum gases, liquefied.	S	S	S	2,360	100.0	S
1012	Butylene also refer to Petroleum gases, liquefied.	S	S	S	S	S	S
1038	Ethylene, refrigerated liquid (cryogenic liquid).	S	S	S	S	S	S
1049	Hydrogen, compressed	963	99.6	0.4	2,100	99.0	1.0
1073	Oxygen, refrigerated liquid (cryogenic liquid).	S	S	S	S	S	S
1075	Petroleum gases, liquefied or Liquefied petroleum gas	9,177	89.7	10.3	19,047	92.9	7.1
1077	Propylene also refer to Petroleum gases, liquefied.	5,204	100.0	S	S	S	S
1086	Vinyl chloride, stabilized.	1,338	100.0	S	1,750	100.0	S
1114	Benzene	S	S	S	S	S	S
1179	Ethyl butyl ether	S	S	S	S	S	S
1202	Diesel fuel, including gas oil or heating oil, light	50,908	80.1	19.9	56,277	79.2	20.8
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol.	242,315	83.5	16.5	275,538	82.3	17.7
1267	Petroleum crude oil	8,119	100.0	S	14,595	100.0	S
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s	7,125	96.6	S	10,131	93.1	S
1280	Propylene oxide	2,145	100.0	S	2,140	100.0	S
1307	Xylenes	S	S	S	S	S	S
1824	Sodium hydroxide solution.	S	S	S	S	S	S
1830	Sulfuric acid with more than 51% acid	298	100.0	S	S	S	S
1863	Fuel, aviation, turbine engine	60,108	82.2	17.8	69,127	82.4	17.6
1962	Ethylene	9,387	92.7	S	18,142	95.2	S
1965	Hydrocarbon gas mixture, liquefied, n.o.s.	1,353	100.0	S	1,673	100.0	S
1969	Isobutane also refer to Petroleum gases, liquefied.	S	S	S	S	S	S
1971	Methane, compressed or natural gas, compressed (with high methane content)	1,820	100.0	S	7,958	100.0	S
1978	Propane, also refer to Petroleum gases, liquefied.	7,195	95.9	4.1	10,985	93.4	6.6
1987	Alcohols, n.o.s., including denatured alcohol	1,764	55.6	44.4	2,550	49.4	50.6
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s	127,208	86.2	13.8	174,250	86.3	13.7
1999	Tars, liquid including road oils and cutback bitumens,including road asphalt.	1,947	97.9	S	5,464	98.3	S

Footnotes available at end of table.

Table H8d.

Hazardous Material Shipment Characteristics by Pipeline for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value			Weight		
		2022 dollars (in millions)	Intrastate (percent of total)	Interstate (percent of total)	2022 tons (in thousands)	Intrastate (percent of total)	Interstate (percent of total)
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s.	S	S	S	S	S	S
3295	Hydrocarbons, liquid, n.o.s.	S	S	S	S	S	S

S Withheld because estimate did not meet publication standards.

[1] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. For purposes of this table, individual shipment data are classified as either completely "interstate" or completely "intrastate." All shipments with the state of destination different from the state of origin are classified as "interstate." All shipments having the state of origin the same as the state of destination are classified as "intrastate."

Table H8e.

Hazardous Material Shipment Characteristics by Truck-Rail for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value			Weight		
		2022 dollars (in millions)	Intrastate (percent of total)	Interstate (percent of total)	2022 tons (in thousands)	Intrastate (percent of total)	Interstate (percent of total)
	Total	**58,701**	**28.3**	**71.7**	**94,969**	**29.9**	**70.1**
	Subtotal for Selected UN/NA Numbers	**49,821**	**26.5**	**58.4**	**88,643**	**28.6**	**64.8**
1005	Ammonia, anhydrous.	152	S	93.8	S	S	S
1017	Chlorine.	943	75.2	24.8	569	41.5	58.5
1040	Ethylene oxide or Ethylene oxide with nitrogen up to a total pressure of 1 MPa (10 bar) at 50 degrees	S	4.7	S	S	5.7	S
1055	Isobutylene also refer to petroleum gases, liquefied	619	33.8	66.2	601	45.5	54.5
1066	Nitrogen, compressed.	S	S	S	S	S	S
1073	Oxygen, refrigerated liquid (cryogenic liquid).	S	S	S	S	S	12.5
1075	Petroleum gases, liquefied or liquefied petroleum gas	505	37.9	62.1	769	45.8	54.2
1090	Acetone.	S	S	S	S	S	S
1114	Benzene	S	S	S	S	S	S
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions	3,985	S	99.7	5,624	S	99.8
1202	Diesel fuel, including gas oil or heating oil, light	3,162	71.2	28.8	3,886	72.8	S
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol.	5,910	69.7	S	6,553	58.1	S
1223	Kerosene.	S	S	S	829	S	S
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s.	232	22.1	77.9	352	17.1	82.9
1280	Propylene oxide	442	16.8	83.2	367	19.1	80.9
1495	Sodium chlorate	398	13.7	86.3	571	15.9	84.1
1744	Bromine or bromine solutions ...	S	S	S	S	S	S
1791	Hypochlorite solutions	168	29.1	70.9	773	S	23.5
1805	Phosphoric acid solution.	463	S	97.9	578	S	98.3
1824	Sodium hydroxide solution.	1,265	9.1	90.9	3,864	15.5	84.5
1830	Sulfuric acid with more than 51% acid	872	S	S	2,746	S	38.3
1834	Sulfuryl chloride	S	S	S	S	S	S
1845	Carbon dioxide, solid or dry ice.	S	S	S	S	S	S
1863	Fuel, aviation, turbine engine ...	1,561	S	S	1,833	S	S
1918	Isopropylbenzene.	737	S	100.0	723	S	100.0
1965	Hydrocarbon gas mixture, liquefied, n.o.s.	S	S	37.6	S	S	35.3
1969	Isobutane refer also Petroleum gases, liquefied	S	S	S	S	S	S
1977	Nitrogen, refrigerated liquid cryogenic liquid	34	S	S	S	S	S
1978	Propane, refer also Petroleum gases, liquefied.	S	7.7	S	S	10.7	S
1987	Alcohols, n.o.s., including denatured alcohol	7,009	S	92.6	9,278	11.5	88.5
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s.	6,035	58.9	41.1	9,254	65.2	S

Footnotes available at end of table.

Table H8e.

Hazardous Material Shipment Characteristics by Truck-Rail for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value			Weight		
		2022 dollars (in millions)	Intrastate (percent of total)	Interstate (percent of total)	2022 tons (in thousands)	Intrastate (percent of total)	Interstate (percent of total)
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt	562	S	96.6	1,481	3.8	96.2
2020	Chlorophenols, solid	S	S	S	S	S	S
2187	Carbon dioxide, refrigerated liquid	S	S	S	S	S	S
2312	Phenol, molten	S	S	S	S	S	S
2448	Sulfur, molten.	S	S	S	786	S	98.8
2693	Bisulfites, aqueous solutions, n.o.s.	S	S	S	S	S	1.3
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s.	S	12.9	S	S	14.2	S
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.)	883	S	99.9	1,548	S	99.9
3475	Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture, with more than 10% ethanol	1,960	2.2	97.8	2,625	2.3	97.7

S Withheld because estimate did not meet publication standards.

[1] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. For purposes of this table, individual shipment data are classified as either completely "interstate" or completely "intrastate." All shipments with the state of destination different from the state of origin are classified as "interstate." All shipments having the state of origin the same as the state of destination are classified as "intrastate."

Table H9.

Hazardous Material Shipment Characteristics for Toxic by Inhalation (TIH) for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Description	Value		Weight	
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
Total	**2,147,421**	**100.0**	**2,590,077**	**100.0**
Toxic by inhalation	21,296	1.0	31,000	1.2

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Toxic by inhalation (TIH) gases and volatile liquids that are toxic when inhaled.

Table H10.

Hazardous Material Shipment Characteristics for Packaging Group I for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Description	Value		Weight	
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
Total	**2,147,421**	**100.0**	**2,590,077**	**100.0**
Packaging Group I	713,269	33.2	791,907	30.6

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Packaging Groups I, II, and III reflect the level of hazard associated with the material being shipped. Packaging Group I is the most rigorous.

Table H11a.

Hazardous Material Shipment Characteristics for Export by Destination: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Destination	Value		Weight	
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
Total	**69,044**	**100.0**	**56,704**	**100.0**
Canada	10,402	15.1	6,706	11.8
Mexico	25,816	37.4	26,762	47.2
Rest of Americas	14,113	20.4	S	S
Europe and Africa	8,408	12.2	5,041	8.9
Asia and Oceania	10,305	14.9	3,623	6.4

S Withheld because estimate did not meet publication standards.
Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table H11b.

Hazardous Material Shipment Characteristics for Export by Destination: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys. Estimates may not be additive because of rounding)

Country of destination	Value			Weight		
	2022 dollars (in millions)	2017 dollars (in millions)	Percent change	2022 tons (in thousands)	2017 tons (in thousands)	Percent change
Total	**69,044**	**70,596**	**−2.2**	**56,704**	**77,553**	**−26.9**
Canada	10,402	9,167	13.5	6,706	8,132	−17.5
Mexico	25,816	19,767	30.6	26,762	29,962	−10.7
Rest of Americas	14,113	18,366	−23.2	S	24,052	S
Europe and africa	8,408	11,638	−27.8	5,041	7,007	−28.1
Asia and Oceania	10,305	11,658	−11.6	3,623	8,400	−56.9

S Withheld because estimate did not meet publication standards.
Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table H12.

Hazardous Material Shipment Characteristics by Selected NAICS[1] Code and Mode of Transportation for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

NAICS code	NAICS description and mode of transportation	Value		Weight	
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
00	**All Sectors**				
	All modes....................................	**2,147,421**	**100.0**	**2,590,077**	**100.0**
	Single modes................................	**2,034,386**	**94.7**	**2,470,463**	**95.4**
	Truck[2]..	1,180,593	55.0	1,307,926	50.5
	For-hire truck	597,013	27.8	633,426	24.5
	Company-owned truck	356,663	16.6	432,637	16.7
	Customer pick-up[3]	226,917	10.6	241,863	9.3
	Rail	163,106	7.6	247,046	9.5
	Water	112,341	5.2	137,550	5.3
	Inland water...............................	44,223	2.1	54,835	2.1
	Great Lakes	S	S	S	S
	Deep sea...................................	68,118	3.2	82,715	3.2
	Multiple waterways.........................	S	S	S	S
	Air (includes truck and air)	S	S	S	S
	Pipeline[4]......................................	573,559	26.7	777,815	30.0
	Other single modes[5]	S	S	S	S
	Multiple modes	**94,638**	**4.4**	**115,028**	**4.4**
	Parcel, U.S. Postal Service, or courier	18,588	0.9	848	Z
	Truck and rail.................................	58,701	2.7	94,969	3.7
	Truck and water	17,193	0.8	19,126	0.7
	Rail and water	87	Z	49	Z
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6]...........................	**18,396**	**0.9**	**4,586**	**0.2**
324	**Petroleum and Coal Products Manufacturing**				
	All modes....................................	**777,711**	**100.0**	**966,811**	**100.0**
	Single modes...............................	**751,133**	**96.6**	**931,711**	**96.4**
	Truck[2]..	101,554	13.1	137,655	14.2
	For-hire truck	92,321	11.9	124,732	12.9
	Company-owned truck	1,553	0.2	3,279	0.3
	Customer pick-up[3]	7,681	1.0	9,643	1.0
	Rail	57,490	7.4	79,258	8.2
	Water	88,990	11.4	106,953	11.1
	Inland water...............................	25,056	3.2	33,674	3.5
	Great Lakes	S	S	S	S
	Deep sea...................................	63,934	8.2	73,280	7.6
	Multiple waterways.........................	S	S	S	S
	Air (includes truck and air)	S	S	S	S
	Pipeline[4]......................................	503,097	64.7	607,843	62.9
	Other single modes[5]	S	S	S	S
	Multiple modes	**26,553**	**3.4**	**35,073**	**3.6**
	Parcel, U.S. Postal Service, or courier	16	Z	14	Z
	Truck and rail.................................	14,848	1.9	20,981	2.2
	Truck and water	11,662	1.5	14,058	1.5
	Rail and water................................	27	Z	20	Z
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6]...........................	**26**	**Z**	**27**	**Z**
325	**Chemical Manufacturing**				
	All modes....................................	**252,898**	**100.0**	**384,005**	**100.0**
	Single modes...............................	**211,425**	**83.6**	**328,309**	**85.5**
	Truck[2]..	98,705	39.0	112,009	29.2
	For-hire truck	78,523	31.0	60,517	15.8
	Company-owned truck	11,073	4.4	41,440	10.8
	Customer pick-up[3]	9,109	3.6	10,052	2.6
	Rail	51,317	20.3	63,295	16.5
	Water	7,044	2.8	12,801	3.3
	Inland water...............................	2,985	1.2	3,443	0.9
	Great Lakes	S	S	S	S
	Deep sea...................................	4,059	1.6	9,357	2.4
	Multiple waterways.........................	S	S	S	S
	Air (includes truck and air)	1,346	0.5	S	S
	Pipeline[4]......................................	53,013	21.0	140,163	36.5
	Other single modes[5]	S	S	S	S

Footnotes available at end of table.

Hazardous Material Shipment Characteristics by Selected NAICS[1] Code and Mode of Transportation for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

NAICS code	NAICS description and mode of transportation	Value		Weight	
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
	Multiple modes	**40,835**	**16.1**	**54,677**	**14.2**
	Parcel, U.S. Postal Service, or courier	3,283	1.3	27	Z
	Truck and rail	33,555	13.3	51,449	13.4
	Truck and water	S	S	S	S
	Rail and water	S	S	S	S
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6]	**638**	**0.3**	**1,020**	**0.3**
4246	**Chemical and Allied Products Merchant Wholesalers**				
	All modes	**67,880**	**100.0**	**117,883**	**100.0**
	Single modes	**66,044**	**97.3**	**111,013**	**94.2**
	Truck[2]	64,941	95.7	95,474	81.0
	For-hire truck	24,851	36.6	18,918	16.0
	Company-owned truck	36,715	54.1	72,689	61.7
	Customer pick-up[3]	3,375	5.0	3,867	3.3
	Rail	897	1.3	15,171	12.9
	Water	57	0.1	70	0.1
	Inland water	S	S	S	S
	Great Lakes	S	S	S	S
	Deep sea	57	0.1	70	0.1
	Multiple waterways	S	S	S	S
	Air (includes truck and air)	52	0.1	S	S
	Pipeline[4]	98	0.1	294	0.2
	Other single modes[5]	S	S	S	S
	Multiple modes	**1,764**	**2.6**	**6,833**	**5.8**
	Parcel, U.S. Postal Service, or courier	861	1.3	23	Z
	Truck and rail	813	1.2	6,239	5.3
	Truck and water	S	S	S	S
	Rail and water	S	S	S	S
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6]	**73**	**0.1**	**37**	**Z**
4247	**Petroleum and Petroleum Products Merchant Wholesalers**				
	All modes	**836,479**	**100.0**	**984,429**	**100.0**
	Single modes	**810,590**	**96.9**	**968,538**	**98.4**
	Truck[2]	738,074	88.2	861,110	87.5
	For-hire truck	317,709	38.0	409,720	41.6
	Company-owned truck	228,950	27.4	246,865	25.1
	Customer pick-up[3]	191,414	22.9	204,526	20.8
	Rail	42,913	5.1	S	S
	Water	S	S	S	S
	Inland water	S	S	S	S
	Great Lakes	S	S	S	S
	Deep sea	S	S	S	S
	Multiple waterways	S	S	S	S
	Air (includes truck and air)	S	S	S	S
	Pipeline[4]	13,869	1.7	19,854	2.0
	Other single modes[5]	S	S	S	S
	Multiple modes	**8,507**	**1.0**	**12,614**	**1.3**
	Parcel, U.S. Postal Service, or courier	S	S	S	S
	Truck and rail	7,201	0.9	11,094	1.1
	Truck and water	S	S	S	S
	Rail and water	S	S	S	S
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6]	**17,381**	**2.1**	**3,278**	**0.3**

Footnotes available at end of table.

Table H12.

Hazardous Material Shipment Characteristics by Selected NAICS[1] Code and Mode of Transportation for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

NAICS code	NAICS description and mode of transportation	Value		Weight	
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total
45431	**Fuel Dealers**				
	All modes	**42,345**	**100.0**	**43,718**	**100.0**
	Single modes	**42,201**	**99.7**	**43,508**	**99.5**
	Truck[2]	42,026	99.2	43,296	99.0
	For-hire truck	1,091	2.6	S	S
	Company-owned truck	40,671	96.0	41,644	95.3
	Customer pick-up[3]	265	0.6	214	0.5
	Rail	S	S	211	0.5
	Water	S	S	S	S
	Inland water	S	S	S	S
	Great Lakes	S	S	S	S
	Deep sea	S	S	S	S
	Multiple waterways	S	S	S	S
	Air (includes truck and air)	S	S	S	S
	Pipeline[4]	S	S	S	S
	Other single modes[5]	S	S	S	S
	Multiple modes	**S**	**S**	**162**	**0.4**
	Parcel, U.S. Postal Service, or courier	S	S	S	S
	Truck and rail	S	S	157	0.4
	Truck and water	S	S	S	S
	Rail and water	S	S	S	S
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6]	**35**	**0.1**	**S**	**S**
4931	**Warehousing and Storage**				
	All modes	**32,446**	**100.0**	**26,162**	**100.0**
	Single modes	**32,058**	**98.8**	**25,999**	**99.4**
	Truck[2]	25,886	79.8	19,586	74.9
	For-hire truck	11,222	34.6	6,327	24.2
	Company-owned truck	3,416	10.5	1,546	5.9
	Customer pick-up[3]	11,247	34.7	11,712	44.8
	Rail	S	S	S	S
	Water	S	S	S	S
	Inland water	S	S	S	S
	Great Lakes	S	S	S	S
	Deep sea	S	S	S	S
	Multiple waterways	S	S	S	S
	Air (includes truck and air)	9	Z	S	S
	Pipeline[4]	115	0.4	150	0.6
	Other single modes[5]	S	S	S	S
	Multiple modes	**360**	**1.1**	**38**	**0.1**
	Parcel, U.S. Postal Service, or courier	289	0.9	18	0.1
	Truck and rail	S	S	S	S
	Truck and water	S	S	S	S
	Rail and water	S	S	S	S
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6]	**S**	**S**	**S**	**S**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] NAICS codes shown had the highest estimated weight without considering sampling variability and are shown in descending order. NAICS is the North American Industry Classification System.

[2] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[3] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[4] Estimates exclude shipments of crude petroleum (SCTG 16).

[5] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[6] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. NAICS codes shown are those covered in the Commodity Flow Survey.

Table H13.

Hazardous Material Shipment Characteristics of Temperature Controlled[1] Shipments by Mode of Transportation for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Mode of transportation	Value		Weight		Average distance[2] (GCD) per shipment (2022 miles)
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
All modes.	**114,858**	**100.0**	**179,154**	**100.0**	**144**
Single modes	**104,563**	**91.0**	**167,502**	**93.5**	**83**
Truck[3]	83,759	72.9	131,119	73.2	69
For-hire truck	42,112	36.7	50,304	28.1	221
Company-owned truck	34,469	30.0	71,550	39.9	42
Customer pick-up[4]	7,178	6.2	9,265	5.2	35
Rail	8,770	7.6	21,176	11.8	543
Water	S	S	S	S	103
Inland water.	S	S	S	S	149
Great Lakes	S	S	S	S	S
Deep sea.	S	S	S	S	57
Multiple waterways.	S	S	S	S	S
Air (includes truck and air)	S	S	9	Z	1,112
Pipeline[5]	4,281	3.7	7,378	4.1	S
Other single modes[6]	S	S	S	S	S
Multiple modes	**9,992**	**8.7**	**10,749**	**6.0**	**1,128**
Parcel, U.S. Postal Service, or courier . .	5,530	4.8	19	Z	1,171
Truck and rail.	4,421	3.8	10,487	5.9	774
Truck and water	40	Z	S	S	S
Rail and water.	S	S	S	S	S
Other multiple modes[6]	S	S	S	S	1,709
Unknown modes[7].	**303**	**0.3**	**903**	**0.5**	**180**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[4] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[5] Estimates exclude shipments of crude petroleum (SCTG 16).

[6] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[7] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table H14.

Hazardous Material Shipment Characteristics of Temperature Controlled[1] Shipments by Selected UN/NA Numbers[2] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value		Weight		Average distance[2] (GCD) per shipment (2022 miles)
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
	Total	**114,858**	**100.0**	**179,154**	**100.0**	**144**
	Subtotal for Selected UN/NA Numbers	**102,395**	**89.2**	**177,396**	**98.9**	**9,492**
1005	Ammonia, anhydrous.	8,778	7.6	S	S	233
1013	Carbon dioxide	62	0.1	243	0.1	35
1049	Hydrogen, compressed	S	S	S	S	S
1066	Nitrogen, compressed	S	S	S	S	S
1072	Oxygen, compressed	S	S	S	S	S
1073	Oxygen, refrigerated liquid (cryogenic liquid)	1,558	1.4	13,446	7.5	41
1075	Petroleum gases, liquefied or liquefied petroleum gas.	4,006	3.5	5,070	2.8	34
1133	Adhesives, containing a flammable liquid	455	0.4	244	0.1	430
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions	2,988	2.6	3,847	2.1	722
1202	Diesel fuel, including gas oil or heating oil, light	6,395	5.6	8,407	4.7	S
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol	14,207	12.4	20,581	11.5	55
1210	Printing ink, flammable or Printing ink related material (including printing ink thinning or reducing compound), flammable	S	S	S	S	S
1223	Kerosene	115	0.1	131	0.1	53
1263	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, liquid lacquer base, and paint related material including paint thinning, drying, removing or reducing compound	S	S	S	S	339
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s.	1,253	1.1	1,460	0.8	S
1307	Xylenes	S	S	S	S	281
1791	Hypochlorite solutions	369	0.3	1,372	0.8	62
1824	Sodium hydroxide solution.	225	0.2	385	0.2	395
1845	Carbon dioxide, solid or dry ice	3,797	3.3	S	S	1,229
1863	Fuel, aviation, turbine engine	299	0.3	325	0.2	S
1951	Argon, refrigerated liquid (cryogenic liquid)	1,461	1.3	2,286	1.3	40
1966	Hydrogen, refrigerated liquid (cryogenic liquid)	491	0.4	729	0.4	303
1977	Nitrogen, refrigerated liquid cryogenic liquid . . .	2,787	2.4	27,169	15.2	54
1978	Propane, also refer to petroleum gases, liquefied	S	S	S	S	S
1987	Alcohols, n.o.s., including denatured alcohol . . .	1,925	1.7	2,429	1.4	206
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s. . .	17,634	15.4	20,835	11.6	39
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt.	3,805	3.3	10,101	5.6	130
2187	Carbon dioxide, refrigerated liquid	1,146	1.0	8,487	4.7	57
2209	Formaldehyde solutions, with not less than 25% formaldehyde	S	S	S	S	S
2218	Acrylic acid, stabilized.	709	0.6	358	0.2	507
2426	Ammonium nitrate, liquid (hot concentrated solution)	90	0.1	249	0.1	257
2448	Sulfur, molten.	356	0.3	1,163	0.6	161
2491	Ethanolamine or Ethanolamine solutions	295	0.3	169	0.1	406
2531	Methacrylic acid, stabilized	235	0.2	103	0.1	202
2672	Ammonia solution, relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10% but not more than 35% ammonia	S	S	S	S	S

Footnotes available at end of table.

Table H14.

Hazardous Material Shipment Characteristics of Temperature Controlled[1] Shipments by Selected UN/NA Numbers[2] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

UN/NA number	UN/NA description	Value		Weight		Average distance[2] (GCD) per shipment (2022 miles)
		2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
3065	Alcoholic beverages..........................	6,371	5.5	797	0.4	491
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s....	1,294	1.1	780	0.4	567
3175	Solids containing flammable liquid, n.o.s....... .	S	S	S	S	S
3256	Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8 C, at or above its flash point	166	0.1	S	S	168
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.).......................................	10,805	9.4	16,564	9.2	103
3264	Corrosive liquid, acidic, inorganic, n.o.s.........	89	0.1	S	S	S
3475	Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture, with more than 10% ethanol	1,409	1.2	2,037	1.1	590

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

[3] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table H15.
Hazardous Material Shipment Characteristics by Origin State: 2022
(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Origin state	Value		Weight		Average distance[2] (GCD) per shipment (2022 miles)
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
Total	2,147,421	100.0	2,590,077	100.0	207
Alabama.	18,088	0.8	20,735	0.8	34
Alaska.	8,538	0.4	9,956	0.4	59
Arizona.	14,105	0.7	10,230	0.4	404
Arkansas	11,735	0.5	11,445	0.4	S
California	172,189	8.0	213,942	8.3	332
Colorado	16,909	0.8	20,851	0.8	82
Connecticut.	21,855	1.0	20,104	0.8	251
Delaware	11,608	0.5	11,523	0.4	30
District of Columbia	S	S	S	S	S
Florida	38,659	1.8	39,599	1.5	221
Georgia	42,506	2.0	49,585	1.9	69
Hawaii.	9,385	0.4	9,864	0.4	14
Idaho.	3,306	0.2	2,610	0.1	S
Illinois	101,410	4.7	116,443	4.5	117
Indiana	56,431	2.6	69,233	2.7	146
Iowa	22,718	1.1	24,871	1.0	76
Kansas	39,363	1.8	40,773	1.6	53
Kentucky	43,917	2.0	63,009	2.4	85
Louisiana	205,129	9.6	302,350	11.7	185
Maine	7,981	0.4	9,055	0.3	S
Maryland	8,117	0.4	9,087	0.4	272
Massachusetts	31,062	1.4	26,264	1.0	99
Michigan.	41,785	1.9	48,362	1.9	82
Minnesota	36,454	1.7	46,855	1.8	600
Mississippi	13,723	0.6	17,547	0.7	69
Missouri	18,097	0.8	14,928	0.6	110
Montana.	16,960	0.8	20,512	0.8	129
Nebraska	11,847	0.6	25,797	1.0	197
Nevada.	2,615	0.1	2,906	0.1	504
New Hampshire	3,285	0.2	S	S	S
New Jersey	41,033	1.9	42,844	1.7	351
New Mexico.	S	S	S	S	35
New York.	52,748	2.5	58,299	2.3	531
North Carolina	38,283	1.8	26,724	1.0	177
North Dakota	6,906	0.3	7,991	0.3	206
Ohio	65,731	3.1	83,878	3.2	121
Oklahoma	28,436	1.3	33,879	1.3	61
Oregon.	S	S	8,890	0.3	416
Pennsylvania.	40,103	1.9	39,755	1.5	140
Rhode Island.	1,193	0.1	1,462	0.1	102
South Carolina	6,758	0.3	13,287	0.5	149
South Dakota	6,525	0.3	14,198	0.5	104
Tennessee	33,475	1.6	38,908	1.5	63
Texas.	639,296	29.8	787,734	30.4	109
Utah	59,832	2.8	S	S	282
Vermont.	1,931	0.1	2,847	0.1	15
Virginia.	14,891	0.7	12,282	0.5	S
Washington.	19,099	0.9	16,220	0.6	431
West Virginia.	S	S	S	S	82
Wisconsin	26,644	1.2	26,368	1.0	368
Wyoming.	8,255	0.4	10,228	0.4	858

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table H16.

Hazardous Material Shipment Characteristics by Destination State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey. Estimates may not be additive because of rounding)

Destination state	Value		Weight		Average distance[2] (GCD) per shipment (2022 miles)
	2022 dollars (in millions)	Percent of total	2022 tons (in thousands)	Percent of total	
Total	**2,147,421**	**100.0**	**2,590,077**	**100.0**	**207**
Alabama.......................	23,445	1.1	28,236	1.1	118
Alaska........................	9,028	0.4	10,730	0.4	S
Arizona.......................	18,676	0.9	19,131	0.7	739
Arkansas	13,954	0.6	15,713	0.6	131
California	195,751	9.1	254,711	9.8	371
Colorado	22,266	1.0	30,375	1.2	384
Connecticut...................	15,103	0.7	14,793	0.6	114
Delaware	11,222	0.5	13,840	0.5	80
District of Columbia	160	Z	247	Z	258
Florida	61,290	2.9	47,545	1.8	320
Georgia	47,145	2.2	53,387	2.1	157
Hawaii........................	9,920	0.5	10,306	0.4	728
Idaho.........................	3,552	0.2	3,984	0.2	S
Illinois	83,978	3.9	100,554	3.9	94
Indiana	56,357	2.6	64,913	2.5	159
Iowa	12,749	0.6	16,362	0.6	122
Kansas	24,883	1.2	25,859	1.0	105
Kentucky	38,596	1.8	54,243	2.1	224
Louisiana	169,706	7.9	264,729	10.2	229
Maine	7,803	0.4	8,705	0.3	S
Maryland	11,220	0.5	10,482	0.4	317
Massachusetts	37,392	1.7	36,023	1.4	119
Michigan......................	52,614	2.5	57,525	2.2	197
Minnesota	35,622	1.7	45,874	1.8	173
Mississippi	22,745	1.1	26,168	1.0	264
Missouri	30,804	1.4	31,557	1.2	189
Montana......................	14,977	0.7	18,240	0.7	372
Nebraska	7,746	0.4	13,902	0.5	268
Nevada.......................	10,056	0.5	S	S	681
New Hampshire	6,801	0.3	6,756	0.3	S
New Jersey	31,424	1.5	31,872	1.2	206
New Mexico...................	6,627	0.3	7,588	0.3	386
New York.....................	55,859	2.6	61,308	2.4	165
North Carolina	27,125	1.3	33,624	1.3	145
North Dakota	7,331	0.3	7,003	0.3	236
Ohio	64,156	3.0	73,783	2.8	194
Oklahoma	30,383	1.4	33,759	1.3	169
Oregon.......................	12,354	0.6	11,975	0.5	575
Pennsylvania..................	55,455	2.6	61,893	2.4	192
Rhode Island..................	2,002	0.1	2,182	0.1	133
South Carolina	14,020	0.7	10,653	0.4	394
South Dakota	4,518	0.2	S	S	S
Tennessee	33,053	1.5	39,510	1.5	275
Texas.........................	621,979	29.0	769,842	29.7	139
Utah	29,143	1.4	29,901	1.2	364
Vermont......................	4,788	0.2	5,533	0.2	S
Virginia.......................	18,775	0.9	19,347	0.7	215
Washington...................	18,026	0.8	14,748	0.6	910
West Virginia..................	19,622	0.9	27,121	1.0	148
Wisconsin	25,771	1.2	26,287	1.0	196
Wyoming.....................	9,445	0.4	11,354	0.4	269

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: Value-of-shipments estimates have not been adjusted for price changes. The "Reliability of Estimates" tables provide estimated measures of sampling variability. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Reliability of the Estimates for Geographic Area Series

Table B-A1a.

Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Mode of transportation	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[1]
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
All modes	**1.3**	**0.0**	**1.9**	**0.0**	**2.8**
Single modes	**1.4**	**0.4**	**1.8**	**0.6**	**6.6**
Truck[2]	1.4	0.4	2.9	1.1	6.5
For-hire truck	1.7	0.5	2.5	0.8	7.5
Company-owned truck	3.1	0.6	7.7	1.5	8.6
Customer pick-up[3]	4.0	0.2	5.9	0.8	14.2
Rail	3.1	0.1	6.2	0.8	4.4
Water	11.9	0.1	12.5	0.5	17.3
Inland water	23.0	0.1	20.7	0.4	37.5
Great Lakes	42.0	Z	48.5	0.3	34.5
Deep sea	16.2	0.1	16.4	0.2	9.8
Multiple waterways	S	S	S	S	S
Air (includes truck and air)	5.3	Z	7.5	Z	4.5
Pipeline[4]	5.3	0.1	6.1	0.4	S
Other single modes[5]	45.4	Z	34.8	0.1	29.5
Multiple modes	**2.4**	**0.4**	**7.1**	**0.5**	**3.2**
Parcel, U.S. Postal Service, or courier	1.9	0.2	3.8	Z	3.3
Truck and rail	9.5	0.3	8.1	0.5	8.4
Truck and water	10.5	Z	10.0	0.1	5.3
Rail and water	26.8	Z	38.8	0.1	26.8
Other multiple modes[5]	34.2	Z	S	S	14.6
Unknown modes[6]	**6.2**	**0.1**	**15.8**	**0.1**	**7.9**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[3] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[4] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[5] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[6] "Unknown mode" represents a shipment reported as unknown mode or reported with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A1b.

Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Mode of transportation	Value			Weight			Average distance (GCD) per shipment[1]		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017		2022	2017	
All modes	**1.3**	**1.0**	**2.0**	**1.9**	**1.3**	**2.3**	**2.8**	**3.4**	**3.6**
Single modes	**1.4**	**1.1**	**2.2**	**1.8**	**1.6**	**2.2**	**6.6**	**4.6**	**7.8**
Truck[2]	1.4	1.2	2.4	2.9	2.0	3.3	6.5	4.7	8.5
For-hire truck	1.7	1.5	N	2.5	2.7	N	7.5	5.6	N
Company-owned truck	3.1	1.2	N	7.7	1.6	N	8.6	2.2	N
Customer pick-up[3]	4.0	N	N	5.9	N	N	14.2	N	N
Rail	3.1	3.9	11.1	6.2	5.2	9.4	4.4	5.5	7.5
Water	11.9	5.4	9.2	12.5	5.4	7.4	17.3	18.2	39.6
Inland water	23.0	7.0	14.6	20.7	7.7	10.9	37.5	17.4	57.5
Great Lakes	42.0	31.0	48.5	48.5	34.9	67.0	34.5	6.8	26.3
Deep sea	16.2	7.8	14.8	16.4	10.7	11.4	9.8	22.2	43.4
Multiple waterways	S	28.8	S	S	23.8	S	S	27.6	S
Air (includes truck and air)	5.3	2.5	1.8	7.5	8.0	7.2	4.5	1.4	4.2
Pipeline[4]	5.3	7.8	16.1	6.1	7.4	11.0	S	S	S
Other single modes[5]	45.4	14.7	31.3	34.8	22.8	18.1	29.5	40.8	121.5
Multiple modes	**2.4**	**1.5**	**3.1**	**7.1**	**4.4**	**11.3**	**3.2**	**2.7**	**3.4**
Parcel, U.S. Postal Service, or courier	1.9	1.8	3.0	3.8	2.8	7.7	3.3	2.7	3.4
Truck and rail	9.5	3.4	17.0	8.1	6.4	18.4	8.4	2.3	5.5
Truck and water	10.5	2.8	3.5	10.0	7.1	10.7	5.3	10.9	13.4
Rail and water	26.8	17.5	4.3	38.8	8.8	10.1	26.8	9.7	15.7
Other multiple modes[5]	34.2	8.7	4.3	S	16.0	S	14.6	6.9	17.9
Unknown modes[6]	**6.2**	**N**	**N**	**15.8**	**N**	**N**	**7.9**	**N**	**N**

N Not available or comparable.

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[3] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[4] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[5] "Other mode" (single and multimode) represents a shipment reported with a valid mode others other mode or reported with a transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[6] "Unknown mode" represents a shipment reported as unknown mode or reported with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A2a.

Estimated Measures of Reliability for Shipment Characteristics by Distance Shipped for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Distance shipped[1] (based on Great Circle Distance)	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
Total.................................	**1.3**	**0.0**	**1.9**	**0.0**
Less than 50 miles.....................	3.5	0.9	3.4	1.2
50 to 99 miles.........................	1.4	0.2	4.9	0.6
100 to 249 miles	2.4	0.4	3.4	0.3
250 to 499 miles	2.3	0.3	5.2	0.4
500 to 749 miles	2.1	0.1	4.3	0.2
750 to 999 miles	2.2	0.1	5.3	0.2
1,000 to 1,499 miles	1.7	0.1	10.2	0.3
1,500 to 1,999 miles	2.5	0.1	8.4	0.1
2,000 miles or more	3.5	0.1	11.8	0.1

[1] Shipments are grouped into distance categories based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere over the surface of that sphere.
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A2b.

Estimated Measures of Reliability for Shipment Characteristics by Distance Shipped for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Distance shipped[1] (based on Great Circle Distance)	Value			Weight		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017	
Total.................................	**1.3**	**1.0**	**2.0**	**1.9**	**1.3**	**2.3**
Less than 50 miles.....................	3.5	1.3	4.4	3.4	2.2	3.9
50 to 99 miles.........................	1.4	2.7	3.7	4.9	3.1	6.0
100 to 249 miles	2.4	1.7	3.8	3.4	2.1	4.0
250 to 499 miles	2.3	0.6	3.0	5.2	1.5	5.8
500 to 749 miles	2.1	1.2	3.2	4.3	3.3	5.1
750 to 999 miles	2.2	1.5	3.5	5.3	4.7	5.7
1,000 to 1,499 miles	1.7	1.1	2.6	10.2	5.2	10.8
1,500 to 1,999 miles	2.5	1.5	4.0	8.4	2.7	13.5
2,000 miles or more	3.5	2.1	5.3	11.8	7.8	22.4

[1] Shipments are grouped into distance categories based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere over the surface of that sphere.
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A3a.
Estimated Measures of Reliability for Shipment Characteristics by Shipment Weight for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Shipment weight	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[1]
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
Total...............................	**1.3**	**0.0**	**1.9**	**0.0**	**2.8**
Less than 50 lbs.............................	2.4	0.3	4.0	Z	3.0
50 to 99 lbs.................................	3.1	0.1	6.4	Z	5.1
100 to 499 lbs...............................	3.4	0.3	3.6	Z	2.8
500 to 749 lbs...............................	5.9	0.1	4.9	Z	4.9
750 to 999 lbs...............................	2.2	Z	1.3	Z	4.0
1,000 to 9,999 lbs..........................	2.4	0.4	1.8	0.2	5.7
10,000 to 49,999 lbs.	1.4	0.4	3.2	1.3	5.0
50,000 to 99,999 lbs.	5.1	0.3	4.6	0.7	4.0
100,000 lbs. or more.......................	2.6	0.2	6.1	1.6	4.0

Z Rounds to zero.
[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A3b.
Estimated Measures of Reliability for Shipment Characteristics by Shipment Weight for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Shipment weight	Value			Weight			Average distance (GCD) per shipment[1]		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017		2022	2017	
Total..................	**1.3**	**1.0**	**2.0**	**1.9**	**1.3**	**2.3**	**2.8**	**3.4**	**3.6**
Less than 50 lbs.	2.4	1.5	3.7	4.0	1.1	8.3	3.0	3.4	3.4
50 to 99 lbs.	3.1	2.7	4.6	6.4	1.7	7.7	5.1	2.8	7.3
100 to 499 lbs...........	3.4	1.4	4.2	3.6	1.8	4.1	2.8	3.6	5.4
500 to 749 lbs...........	5.9	1.8	7.6	4.9	2.8	5.5	4.9	2.3	6.5
750 to 999 lbs...........	2.2	2.2	3.8	1.3	2.1	2.3	4.0	3.5	6.0
1,000 to 9,999 lbs.......	2.4	1.7	3.6	1.8	1.1	2.1	5.7	1.8	6.6
10,000 to 49,999 lbs. ...	1.4	1.6	2.5	3.2	2.4	3.7	5.0	1.8	5.1
50,000 to 99,999 lbs. ...	5.1	3.5	7.4	4.6	2.7	4.2	4.0	6.2	6.7
100,000 lbs. or more....	2.6	3.0	6.4	6.1	2.1	7.7	4.0	3.6	3.2

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A4a.

Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[1]
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
	All commodities[2]	**1.3**	**0.0**	**1.9**	**0.0**	**2.8**
01	Live animals and live fish	22.2	Z	22.0	Z	17.7
02	Cereal grains (includes seed)	6.0	Z	7.2	0.3	19.2
03	Agricultural products (excludes animal feed, cereal grains, and forage products)	7.4	0.1	6.7	0.1	14.3
04	Animal feed, eggs, honey, and other products of animal origin	7.3	0.1	5.8	0.2	14.6
05	Meat, poultry, fish, seafood, and their preparations	4.4	0.1	7.1	0.1	27.4
06	Milled grain products and preparations and bakery products	8.1	0.1	10.3	0.1	21.0
07	Other prepared foodstuffs and fats and oils	5.3	0.2	18.3	1.0	7.9
08	Alcoholic beverages, and denatured alcohol	3.5	0.1	6.0	0.1	12.8
09	Tobacco products	12.0	0.1	12.9	Z	8.1
10	Monumental or building stone	21.0	Z	22.1	Z	23.6
11	Natural sands	9.0	Z	15.2	0.6	17.6
12	Gravel and crushed stone (excludes dolomite and slate)	7.2	Z	6.3	1.0	5.1
13	Other nonmetallic minerals, not elsewhere classified	4.9	Z	8.9	0.1	8.8
14	Metallic ores and concentrates	29.8	0.1	30.8	0.1	44.4
15	Coal	10.6	Z	9.1	0.4	42.1
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)	3.1	0.2	3.4	0.3	18.6
18	Fuel oils (includes diesel, Bunker C, and biodiesel)	7.3	0.2	8.3	0.5	9.5
19	Other coal and petroleum products, not elsewhere classified.	18.6	0.4	11.7	0.8	18.0
20	Basic chemicals	3.3	0.1	6.1	0.2	11.2
21	Pharmaceutical products	4.3	0.3	7.8	Z	9.6
22	Fertilizers	9.4	Z	16.4	0.2	11.7
23	Chemical products and preparations, not elsewhere classified.	5.4	0.1	15.4	0.2	7.2
24	Plastics and rubber	3.2	0.1	4.3	0.1	2.9
25	Logs and other wood in the rough	27.6	Z	32.0	Z	26.4
26	Wood products	4.2	0.1	5.5	0.2	9.9
27	Pulp, newsprint, paper, and paperboard	4.6	Z	6.8	0.1	12.6
28	Paper or paperboard articles	3.2	Z	10.4	0.1	5.6
29	Printed products	5.5	Z	11.1	Z	7.7
30	Textiles, leather, and articles of textiles or leather	7.0	0.3	7.0	Z	6.4
31	Nonmetallic mineral products	3.8	0.1	17.9	1.5	9.5
32	Base metal in primary or semifinished forms and in finished basic shapes	3.3	0.1	5.3	0.2	7.2
33	Articles of base metal	3.0	0.1	6.1	Z	4.7
34	Machinery	2.4	0.1	4.8	Z	2.8
35	Electronic and other electrical equipment and components and office equipment	2.6	0.3	7.2	0.1	4.4
36	Motorized and other vehicles (including parts)	8.4	0.6	8.5	0.2	4.9
37	Transportation equipment, not elsewhere classified.	10.3	0.2	9.4	Z	3.9
38	Precision instruments and apparatus	4.3	0.1	8.2	Z	10.9
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	6.3	0.1	6.6	Z	3.9
40	Miscellaneous manufactured products	3.5	0.1	17.6	0.2	2.3
41	Waste and scrap	6.8	Z	7.2	0.1	13.9
43	Mixed freight.	5.4	0.5	4.2	0.1	4.5

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A4b.

Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

SCTG code	Commodity description	Value			Weight			Average distance (GCD) per shipment[1]		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2022	2017		2022	2017		2022	2017	
	All commodities[2]	**1.3**	**1.0**	**2.0**	**1.9**	**1.3**	**2.3**	**2.8**	**3.4**	**3.6**
01	Live animals and live fish	22.2	29.9	21.3	22.0	32.4	20.2	17.7	12.3	14.8
02	Cereal grains (includes seed)	6.0	2.5	8.0	7.2	1.8	5.1	19.2	17.8	36.7
03	Agricultural products (excludes animal feed, cereal grains, and forage products)	7.4	4.8	10.0	6.7	4.4	6.6	14.3	11.1	10.9
04	Animal feed, eggs, honey, and other products of animal origin	7.3	2.9	10.5	5.8	5.9	8.5	14.6	19.6	30.7
05	Meat, poultry, fish, seafood, and their preparations	4.4	2.1	6.9	7.1	2.3	9.5	27.4	17.6	104.8
06	Milled grain products and preparations and bakery products	8.1	3.2	7.4	10.3	5.8	9.4	21.0	16.8	23.6
07	Other prepared foodstuffs and fats and oils	5.3	1.7	7.3	18.3	3.1	22.0	7.9	12.0	14.2
08	Alcoholic beverages, and denatured alcohol	3.5	2.4	5.2	6.0	3.3	7.9	12.8	17.1	21.1
09	Tobacco products	12.0	15.6	22.5	12.9	24.9	29.3	8.1	9.1	10.3
10	Monumental or building stone	21.0	12.7	26.5	22.1	14.6	17.2	23.6	18.5	23.7
11	Natural sands	9.0	14.0	10.2	15.2	6.9	14.1	17.6	20.6	10.6
12	Gravel and crushed stone (excludes dolomite and slate) . . .	7.2	7.2	15.5	6.3	7.2	11.3	5.1	8.3	8.0
13	Other nonmetallic minerals, not elsewhere classified	4.9	6.6	5.7	8.9	12.4	7.2	8.8	14.5	19.2
14	Metallic ores and concentrates	29.8	9.8	32.9	30.8	19.4	28.5	44.4	13.0	16.5
15	Coal	10.6	4.4	11.5	9.1	5.2	6.7	42.1	20.7	40.9
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)	3.1	5.4	7.4	3.4	6.1	5.2	18.6	10.6	19.4
18	Fuel oils (includes diesel, Bunker C, and biodiesel)	7.3	4.5	11.0	8.3	4.2	6.9	9.5	10.6	11.3
19	Other coal and petroleum products, not elsewhere classified	18.6	6.2	33.1	11.7	5.0	20.2	18.0	9.9	51.2
20	Basic chemicals	3.3	2.6	4.8	6.1	5.1	9.3	11.2	17.9	15.5
21	Pharmaceutical products	4.3	5.9	9.7	7.8	10.8	22.7	9.6	6.4	8.7
22	Fertilizers	9.4	4.9	14.6	16.4	5.7	13.2	11.7	13.4	33.4
23	Chemical products and preparations, not elsewhere classified	5.4	4.7	8.1	15.4	5.8	20.0	7.2	6.7	6.1
24	Plastics and rubber	3.2	1.7	4.3	4.3	3.8	6.1	2.9	16.4	12.4
25	Logs and other wood in the rough	27.6	14.8	15.7	32.0	14.9	16.4	26.4	16.6	60.9
26	Wood products	4.2	1.3	7.5	5.5	1.7	5.6	9.9	14.9	17.3
27	Pulp, newsprint, paper, and paperboard	4.6	5.0	5.9	6.8	7.2	7.8	12.6	7.0	14.7
28	Paper or paperboard articles	3.2	3.3	5.9	10.4	4.5	14.9	5.6	10.0	7.0
29	Printed products	5.5	5.5	8.1	11.1	6.5	12.5	7.7	12.9	16.9
30	Textiles, leather, and articles of textiles or leather	7.0	2.3	9.9	7.0	5.0	10.1	6.4	3.4	5.1
31	Nonmetallic mineral products	3.8	2.5	5.7	17.9	3.1	23.5	9.5	11.8	18.1
32	Base metal in primary or semifinished forms and in finished basic shapes	3.3	1.9	5.0	5.3	2.9	5.3	7.2	8.3	9.7
33	Articles of base metal	3.0	2.8	4.8	6.1	5.7	6.5	4.7	6.3	8.4
34	Machinery	2.4	1.2	3.0	4.8	3.7	5.8	2.8	3.3	4.4
35	Electronic and other electrical equipment and components and office equipment	2.6	2.0	4.7	7.2	2.6	13.4	4.4	7.7	6.9

Footnotes available at end of table.

Table B-A4b.

Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

SCTG code	Commodity description	Value			Weight			Average distance (GCD) per shipment[1]		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2022	2017		2022	2017		2022	2017	
36	Motorized and other vehicles (including parts)	8.4	3.9	10.9	8.5	7.9	13.6	4.9	4.5	6.6
37	Transportation equipment, not elsewhere classified.	10.3	3.4	11.5	9.4	14.4	26.6	3.9	6.0	6.1
38	Precision instruments and apparatus	4.3	3.4	6.4	8.2	13.5	27.0	10.9	4.7	8.3
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	6.3	5.7	10.4	6.6	4.0	8.8	3.9	4.6	5.6
40	Miscellaneous manufactured products	3.5	2.6	5.1	17.6	8.2	27.2	2.3	3.4	2.4
41	Waste and scrap	6.8	4.6	11.2	7.2	4.9	6.6	13.9	7.2	17.1
43	Mixed freight	5.4	3.5	7.7	4.2	3.1	5.6	4.5	5.3	5.9

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.
[2] Estimates exclude shipments of crude petroleum (SCTG 16).
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Estimated Measures of Reliability for Shipment Characteristics by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[1]
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
	All commodities[2]	**1.3**	**0.0**	**1.9**	**0.0**	**2.8**
010	Live animals and live fish	22.2	Z	22.0	Z	17.7
021	Wheat	9.5	Z	8.7	0.1	18.7
022	Corn, except sweet	7.6	Z	9.1	0.3	27.5
029	Other cereal grains	16.5	Z	19.4	Z	23.4
031	Fresh or chilled potatoes, except sweet	13.8	Z	20.1	Z	12.9
032	Fresh or chilled edible vegetables (except potatoes), and dried vegetables	10.2	Z	9.8	Z	22.3
033	Fruit and nuts, edible, fresh, chilled, or dried	10.5	Z	9.5	Z	18.5
034	Soy beans	11.8	Z	10.5	0.1	7.3
035	Oil seeds and nuts, except olives and soy beans	29.7	Z	25.7	Z	18.0
036	Bulbs, live plants, and seeds for sowing, not elsewhere classified. .	14.1	Z	28.2	Z	13.1
039	Fresh-cut flowers, plants, and parts of plants, and other agricultural products	19.0	Z	18.4	Z	21.0
041	Eggs, cereal straw or husks, forage products, residues and waste from the food industries used in animal feeding, other products of animal origin, not elsewhere classified	6.8	Z	5.5	0.1	13.0
042	Animal feed preparations	9.9	0.1	8.1	0.1	14.7
051	Meat and poultry, fresh, chilled, or frozen, meat in brine, dried or smoked	4.8	0.1	7.5	0.1	27.3
052	Fish (except live), seafood, and their preparations.	5.8	Z	5.2	Z	24.2
053	Preparations, extracts, and juices of meat, fish, or seafood	S	S	S	S	S
061	Wheat flour, groats, and meal	20.3	Z	28.5	0.1	8.7
062	Malt, milled rice and corn (broken, flour, groats, and meal, inulin, wheat gluten, milled cereals and other vegetables and grains) . . .	13.7	Z	17.4	0.1	15.8
063	Bakery products and food preparations of cereals, flour, starch, or milk	13.6	Z	8.1	Z	14.1
064	Bakery products, including frozen	6.9	Z	10.7	Z	28.1
071	Dairy products except beverages and preparations of milk	4.7	0.1	8.5	0.1	13.8
072	Processed or prepared vegetables, fruit, or nuts, except dried or milled, and juices	14.4	0.1	20.5	0.1	13.6
073	Coffee, tea, and spices, except unprocessed coffee and unfermented tea	16.4	Z	17.6	Z	7.2
074	Animal or vegetable fats, oils, waxes, and their cleavage products, prepared edible fats, and flours and meals of oil seeds (excludes oils and fats for use as biodiesel)	9.7	Z	13.7	0.1	19.3
075	Sugars confectionery, solid or syrups not containing added flavoring or coloring	10.9	Z	16.9	0.1	10.9
076	Confectionery, cocoa, and cocoa preparations	12.6	Z	12.2	Z	10.2
077	Edible preparations, not elsewhere classified, and vinegar	6.8	Z	10.7	Z	11.5
078	Nonalcoholic beverages, not elsewhere classified, and ice	23.6	0.2	33.4	0.8	18.6
081	Malt beer	5.8	0.1	7.9	0.1	7.9
082	Wine and other fermented beverages	8.8	Z	10.8	Z	14.5
083	Spirituous beverages and undenatured ethyl alcohol	7.9	Z	7.1	Z	11.2
084	Denatured ethyl alcohol, not for ingestion or use as biofuel	13.8	Z	17.7	Z	16.9
090	Tobacco products	12.0	0.1	12.9	Z	8.1
100	Monumental or building stone, except dolomite	21.0	Z	22.1	Z	23.6
110	Natural sands, except metal-bearing	9.0	Z	15.2	0.6	17.6
120	Gravel and crushed stone, except dolomite and slate	7.2	Z	6.3	1.0	5.1
131	Salt	6.6	Z	11.6	Z	8.6
132	Natural calcium phosphates, natural aluminum-calcium phosphates, and phosphatic chalk	S	S	S	S	27.4
133	Dolomite, including monumental, building, and crushed	16.7	Z	24.2	Z	20.3
139	Other nonmetallic minerals, not elsewhere classified	11.3	Z	30.3	0.1	13.3
141	Iron ores and concentrates	18.9	Z	28.8	0.1	18.2
149	Metallic ores and concentrates, except iron	33.2	Z	38.2	Z	46.0
151	Nonagglomerated bituminous coal	10.4	Z	8.8	0.4	34.4
159	Coal, except nonagglomerated bituminous coal	40.7	Z	42.2	0.2	38.7

Footnotes available at end of table.

Table B-A5.

Estimated Measures of Reliability for Shipment Characteristics by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[1]
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
171	Gasoline, and blends of gasoline and 10 percent ethanol..........	4.1	0.2	4.4	0.3	11.9
172	Aviation turbine fuel (types a and b), and kerosene...............	13.7	0.1	14.2	0.1	13.8
175	Ethanol, ethanol blends of more than 10 percent ethanol, and other fuel alcohols	35.4	Z	39.5	Z	31.9
176	Ethanol, for use as biofuels.....................................	7.2	Z	6.8	Z	15.8
181	Fuel oils	7.1	0.2	7.4	0.4	9.5
182	Blends of fuel oils and biofuel, biodiesel	15.7	0.1	19.5	0.2	46.8
191	Lubricating oils and greases....................................	38.8	0.4	36.8	0.8	21.2
192	Refined petroleum oils and oils obtained from bituminous minerals, not elsewhere classified	15.5	Z	15.7	0.1	32.7
193	Gaseous hydrocarbons	23.9	0.1	27.1	0.4	13.8
199	Other products of petroleum refining, and coal products, not elsewhere classified	10.4	Z	12.0	0.3	10.9
201	Sodium hydroxide (caustic soda) and potassium hydroxide (caustic potash)	12.1	Z	13.8	Z	10.1
202	Inorganic chemicals, not elsewhere classified	5.2	Z	5.2	0.1	20.1
203	Cyclic hydrocarbons	19.8	Z	30.9	0.1	19.8
204	Phenols, phenol-alcohols, aldehydes, cyclic polymers of aldehydes, and acyclic alcohols, and organic acids	20.9	Z	28.8	Z	9.4
205	Organic chemicals, not elsewhere classified	5.2	Z	15.2	0.2	8.3
210	Pharmaceutical products.......................................	4.3	0.3	7.8	Z	9.6
220	Fertilizers and fertilizer materials	9.4	Z	16.4	0.2	11.7
231	Paints and varnishes, enamels, tanning or dyeing extracts, tannins and their derivatives, inks, lakes, toners, and ink	6.0	Z	10.1	Z	8.0
232	Essential oils and resinoids, and perfumery, cosmetic, or toilet preparations...	13.9	0.1	13.7	Z	8.1
233	Soap, organic surface-active agents, cleaning preparations, polishes and creams, and scouring preps......................	9.8	Z	20.3	0.1	7.7
234	Photographic film, plates, paper, paperboard, or textiles, and chemical preps for photographic use	15.6	Z	19.5	Z	25.1
235	Insecticides, rodenticides, fungicides, herbicides, disinfectants, etc..	7.9	Z	12.5	Z	26.9
239	Other chemical products and preparations: glues, prepared explosives, activated natural mineral products, anti-knock preparations, etc..	6.4	Z	33.8	0.2	10.6
241	Plastics and rubber in primary forms or sheets	5.2	0.1	8.2	0.1	5.6
242	Manmade fibers and plastics basic shapes and articles............	1.9	0.1	5.1	0.1	3.9
243	Rubber articles...	13.2	0.1	11.8	Z	7.3
250	Logs and other wood in the rough	27.6	Z	32.0	Z	26.4
261	Wood chips or particles..	13.7	Z	12.9	0.1	23.1
262	Lumber, wood continuously shaped along any of its edges or faces, shingles and shakes	5.1	Z	7.0	0.1	9.5
263	Veneer sheets and sheets for plywood, particle board, fiberboard, plywood, and similar laminated wood	4.7	Z	10.7	0.1	14.3
264	Windows, doors, thresholds, and builders' joinery and carpentry of wood, except shingles and shakes..............................	7.7	Z	7.5	Z	13.3
269	Other wood products...	8.2	Z	6.2	Z	11.9
271	Pulp of fibrous cellulosic materials	29.3	Z	30.4	Z	16.6
272	Newsprint in large rolls or sheets	22.4	Z	22.6	Z	17.6
273	Uncoated paper, tissue, and paperboard in large rolls or sheets ...	10.8	Z	13.7	0.1	16.8
274	Coated, impregnated, treated, or worked paper and paperboard, in large rolls or sheets	6.7	Z	10.3	Z	11.2
280	Paper or paperboard articles	3.2	Z	10.4	0.1	5.6
291	Printed books, brochures, leaflets, and similar printed products ...	7.8	Z	17.3	Z	4.5
292	Newspapers, journals, and periodicals	14.6	Z	13.7	Z	S
293	Advertising material, commercial or trade catalogues, and similar printed products	10.8	Z	23.6	Z	8.0
299	Other printed products	6.6	Z	5.6	Z	9.6

Footnotes available at end of table.

Table B-A5.

Estimated Measures of Reliability for Shipment Characteristics by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[1]
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
301	Textile fibers, yarns, and broad woven or knitted fabrics	7.6	Z	12.5	Z	6.4
302	Textile clothing and accessories, and headgear, except safety	9.8	0.2	11.5	Z	7.6
303	Textiles and textile articles, not elsewhere classified	3.7	Z	6.4	Z	8.5
304	Leather footwear...	17.4	0.1	17.6	Z	8.8
305	Leather and articles of leather or allied materials, and dressed fur skins..	17.6	Z	30.7	Z	11.1
311	Hydraulic cements..	9.8	Z	8.2	0.1	25.4
312	Ceramic products	15.1	Z	21.2	Z	10.5
313	Glass and glass products..	7.4	Z	9.7	Z	8.8
319	Other nonmetallic mineral products..............................	3.7	Z	20.2	1.6	22.8
321	Ferro-alloys, and iron and steel in primary or semi-finished forms, or in powders or granules......................................	10.4	Z	5.7	Z	14.6
322	Flat-rolled products of iron or steel	5.7	0.1	8.3	0.1	11.4
323	Bars, rods, angles, shapes, sections, and wire, of iron or steel	8.8	0.1	8.8	0.1	8.8
324	Nonferrous metal, except precious, unwrought, or in finished basic shapes, or in powders or granules........................	5.3	Z	5.6	Z	13.1
331	Pipes, tubes, and fittings..	6.1	Z	9.8	Z	6.9
332	Structures and parts, except prefabricated buildings	6.2	Z	9.5	Z	7.0
333	Hand tools, cutlery, except of precious metals, interchangeable tools for hand or machine tools,hardware, and industrial fasteners	5.2	0.1	14.2	Z	5.2
339	Other articles of metal...	7.6	Z	10.6	Z	5.3
341	Internal-combustion engines and parts...........................	11.5	0.1	23.9	Z	8.4
342	Turbines, boilers, nuclear reactors, and nonelectric engines and motors, except internal-combustion	14.5	Z	21.8	Z	12.4
343	Pumps, compressors, fans, and ventilating or recycling hoods incorporating a fan..	6.2	Z	14.3	Z	5.8
344	Air-conditioning, refrigerating, or freezing equipment............	6.5	Z	10.5	Z	8.6
345	Materials-handling, excavating, boring, and related machinery and equipment	10.9	0.1	17.7	Z	10.1
349	Other mechanical machinery, not elsewhere classified............	2.8	0.1	6.1	Z	3.8
351	Electric motors, generators, rotary or static converters, and transformers	11.2	Z	15.0	Z	6.6
352	Electric cooking appliances, electro-thermic, or electro-mechanical domestic appliances	11.1	Z	13.6	Z	5.2
353	Line telephone or telegraph apparatus	30.2	Z	30.4	Z	4.8
354	Electronic entertainment products, except parts	19.2	0.2	23.5	Z	6.9
355	Computer and electronic office equipment	8.5	0.1	15.0	Z	6.9
356	Prepared unrecorded or prerecorded media	15.9	Z	12.4	Z	8.6
357	Transmission, and reception apparatus for radio, television, radar, and remote-control	16.3	0.1	27.0	Z	10.0
358	Electronic components and parts................................	12.4	0.1	48.1	Z	3.7
359	Other electronic and electrical equipment, not elsewhere classified...	3.2	0.1	10.3	0.1	5.5
361	Motorized vehicles for transport of less than 10 people, except motorcycles, armored, and recreational..........................	20.2	0.4	18.1	Z	4.0
362	Motor vehicles for the transport of goods, and road tractors for semi-trailers......................................	33.5	Z	32.9	Z	19.7
363	Other vehicles	7.6	Z	7.7	Z	9.8
364	Motor vehicles parts and accessories except motorcycles and armored fighting vehicles......................................	11.1	0.6	9.7	0.1	5.0
371	Railway equipment including locomotives and rolling stock, railway track fixtures and fittings, and parts	24.7	Z	23.4	Z	11.0
372	Aircraft and spacecraft...	12.4	0.2	11.6	Z	3.7
373	Ships, boats, and floating structures	26.9	Z	36.1	Z	10.1
381	Optical elements, instruments, and apparatus, except photographic and cinematographic............................	22.8	Z	S	S	6.9
382	Photographic and photocopying machines	21.4	Z	S	S	15.4
383	Surveying, hydrographic, oceanographic, hydrological, meteorological, and geophysical instruments and appliances	14.1	Z	34.6	Z	11.7

Footnotes available at end of table.

Table B-A5.
Estimated Measures of Reliability for Shipment Characteristics by Three-Digit Commodity for the United States: 2022—Con.
(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[1]
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
384	Instruments, apparatus, and appliances for medical, surgical, dental, veterinary, or similar purposes	8.8	0.1	16.2	Z	14.0
385	Meters and other instruments and apparatus for measuring or process control	6.8	Z	11.4	Z	5.4
390	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	6.3	0.1	6.6	Z	3.9
401	Arms and ammunition	8.3	Z	11.7	Z	2.1
402	Toys, games, and sporting equipment.	4.6	0.1	8.4	Z	3.7
409	Miscellaneous manufactured products	4.6	0.1	19.8	0.2	3.1
411	Metallic waste and scrap	6.9	Z	8.8	0.1	15.3
412	Nonmetallic waste and scrap, except from food processing	16.2	Z	10.5	Z	12.9
439	Mixed freight.	5.4	0.5	4.2	0.1	4.5

S Withheld because estimate did not meet publication standards.
Z Rounds to zero.
[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.
[2] Estimates exclude shipments of crude petroleum (SCTG 16).
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A6a.

Estimated Coefficients of Variation for Shipment Characteristics by NAICS[1] for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

NAICS code	NAICS description	Value (coefficient of variation of number)	Weight (coefficient of variation of number)	Average distance (GCD) per shipment (coefficient of variation of number)[2]
	Total..	**1.3**	**1.9**	**2.8**
212	Mining (except oil and gas)..	8.8	3.3	6.6
31-33	Manufacturing	1.5	3.0	2.2
311	Food manufacturing...	1.4	3.4	14.5
312	Beverage and tobacco product manufacturing	8.3	37.9	16.3
313	Textile mills...	3.2	6.0	5.9
314	Textile product mills...	5.6	11.3	5.2
315	Apparel manufacturing	11.1	35.8	8.2
316	Leather and allied product manufacturing	8.3	14.6	5.4
321	Wood product manufacturing	2.0	6.1	6.4
322	Paper manufacturing	2.5	6.4	8.5
323	Printing and related support activities	2.5	15.4	8.2
324	Petroleum and coal products manufacturing	4.5	8.5	13.7
325	Chemical manufacturing	2.7	3.8	5.6
326	Plastics and rubber products manufacturing	2.3	4.7	5.2
327	Nonmetallic mineral product manufacturing......................	4.2	7.2	10.2
331	Primary metal manufacturing..................................	4.9	7.2	3.3
332	Fabricated metal product manufacturing	2.4	7.4	5.0
333	Machinery manufacturing	2.5	4.1	3.2
334	Computer and electronic product manufacturing	6.0	20.7	3.2
335	Electrical equipment, appliance, and component manufacturing	3.0	19.3	2.7
336	Transportation equipment manufacturing.........................	6.9	6.7	3.3
337	Furniture and related product manufacturing.....................	3.1	6.8	6.2
339	Miscellaneous manufacturing	4.5	12.8	3.4
42	Wholesale trade	2.3	6.1	3.4
423	Merchant wholesalers, durable goods	2.0	16.3	3.2
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers..	13.2	15.8	9.0
4232	Furniture and home furnishing merchant wholesalers	5.8	13.4	5.9
4233	Lumber and other construction materials merchant wholesalers....	3.3	32.9	21.0
4234	Professional and commercial equipment and supplies merchant wholesalers..	3.3	8.4	7.3
4235	Metal and mineral (except petroleum) merchant wholesalers........	3.3	11.7	8.5
4236	Household appliances and electrical and electronic goods merchant wholesalers..	3.7	7.6	8.2
4237	Hardware, and plumbing and heating equipment and supplies merchant wholesalers...	2.2	4.7	4.4
4238	Machinery, equipment, and supplies merchant wholesalers	2.5	17.4	8.7
4239	Miscellaneous durable goods merchant wholesalers...............	4.9	6.1	4.8
424	Merchant wholesalers, nondurable goods.........................	2.9	5.7	7.0
4241	Paper and paper product merchant wholesalers	4.7	6.8	4.3
4242	Drugs and druggists' sundries merchant wholesalers..............	6.7	22.1	6.7
4243	Apparel, piece goods, and notions merchant wholesalers..........	19.1	16.5	5.0
4244	Grocery and related product merchant wholesalers	2.4	5.4	11.4
4245	Farm product raw material merchant wholesalers.................	4.8	6.5	26.8
4246	Chemical and allied products merchant wholesalers...............	3.3	11.2	11.4
4247	Petroleum and petroleum products merchant wholesalers	8.1	10.1	32.5
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers..	2.7	7.7	12.3
4249	Miscellaneous nondurable goods merchant wholesalers	4.0	9.9	13.6
4541	Electronic shopping and mail-order houses	4.3	3.8	4.3
45431	Fuel dealers	4.5	4.0	15.3
4931[3]	Warehousing and storage.......................................	6.8	5.0	3.0
5111	Newspaper, periodical, book, and directory publishers	12.9	13.5	S
551114	Corporate, subsidiary, and regional managing offices	12.6	19.7	9.4

S Withheld because estimate did not meet publication standards.
[1] NAICS codes shown are those covered in the Commodity Flow Survey.
[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.
[3] For tabulation and publication purposes, NAICS 484 is grouped with NAICS 4931.
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A6b.
Estimated Measures of Reliability for Shipment Characteristics by NAICS[1] for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

NAICS code	NAICS description	Value			Weight			Average distance (GCD) per shipment[2]		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2022	2017		2022	2017		2022	2017	
	Total.	**1.3**	**1.0**	**2.0**	**1.9**	**1.3**	**2.3**	**2.8**	**3.4**	**3.6**
212	Mining (except oil and gas).	8.8	4.5	10.8	3.3	4.7	5.0	6.6	12.9	10.1
31-33	Manufacturing	1.5	0.9	2.1	3.0	1.7	3.6	2.2	2.4	3.0
311	Food manufacturing.	1.4	1.2	2.4	3.4	1.5	3.6	14.5	9.9	25.7
312	Beverage and tobacco product manufacturing.	8.3	6.3	11.5	37.9	6.6	62.6	16.3	18.0	21.8
313	Textile mills.	3.2	4.0	4.9	6.0	5.0	6.6	5.9	7.9	9.3
314	Textile product mills	5.6	2.9	6.4	11.3	6.0	9.7	5.2	3.3	4.8
315	Apparel manufacturing	11.1	5.1	9.6	35.8	16.4	83.7	8.2	7.4	10.5
316	Leather and allied product manufacturing.	8.3	6.2	10.7	14.6	10.4	14.3	5.4	4.7	6.3
321	Wood product manufacturing.	2.0	2.7	5.2	6.1	3.3	6.3	6.4	7.6	7.1
322	Paper manufacturing	2.5	2.6	4.1	6.4	2.5	7.5	8.5	4.8	8.1
323	Printing and related support activities	2.5	2.0	3.6	15.4	7.1	17.6	8.2	2.7	7.3
324	Petroleum and coal products manufacturing.	4.5	5.6	11.4	8.5	4.2	10.8	13.7	7.1	13.2
325	Chemical manufacturing.	2.7	2.8	4.7	3.8	2.3	4.8	5.6	3.1	6.5
326	Plastics and rubber products manufacturing.	2.3	1.6	3.5	4.7	3.9	6.7	5.2	3.5	5.5
327	Nonmetallic mineral product manufacturing.	4.2	2.0	5.8	7.2	4.2	7.3	10.2	6.2	13.6
331	Primary metal manufacturing.	4.9	2.4	8.0	7.2	5.6	8.6	3.3	5.0	4.8
332	Fabricated metal product manufacturing.	2.4	1.7	3.9	7.4	3.6	8.6	5.0	5.2	7.6
333	Machinery manufacturing.	2.5	2.8	4.5	4.1	9.9	10.6	3.2	2.7	3.7
334	Computer and electronic product manufacturing	6.0	2.6	7.5	20.7	27.0	83.7	3.2	4.7	4.6
335	Electrical equipment, appliance, and component manufacturing . .	3.0	2.3	5.1	19.3	4.8	24.8	2.7	5.2	5.3
336	Transportation equipment manufacturing	6.9	5.8	9.4	6.7	13.1	14.7	3.3	7.4	7.5
337	Furniture and related product manufacturing.	3.1	4.4	6.3	6.8	6.0	10.2	6.2	5.0	6.3
339	Miscellaneous manufacturing	4.5	1.8	4.9	12.8	5.4	18.4	3.4	2.6	3.7
42	Wholesale trade.	2.3	1.4	3.2	6.1	2.7	6.2	3.4	3.1	4.8
423	Merchant wholesalers, durable goods.	2.0	0.7	2.6	16.3	6.0	21.0	3.2	2.8	4.5
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers.	13.2	3.0	12.2	15.8	8.8	17.6	9.0	5.7	13.3
4232	Furniture and home furnishing merchant wholesalers	5.8	3.4	8.2	13.4	8.1	19.7	5.9	5.3	9.6
4233	Lumber and other construction materials merchant wholesalers.	3.3	2.4	6.8	32.9	15.5	69.3	21.0	16.1	43.6
4234	Professional and commercial equipment and supplies merchant wholesalers	3.3	4.0	6.1	8.4	5.8	10.2	7.3	7.3	8.7
4235	Metal and mineral (except petroleum) merchant wholesalers . . .	3.3	1.9	4.5	11.7	5.9	9.9	8.5	9.7	12.1
4236	Household appliances and electrical and electronic goods merchant wholesalers.	3.7	2.0	5.2	7.6	7.0	13.7	8.2	4.6	8.5
4237	Hardware, and plumbing and heating equipment and supplies merchant wholesalers.	2.2	2.0	4.6	4.7	3.5	7.1	4.4	11.2	13.8
4238	Machinery, equipment, and supplies merchant wholesalers.	2.5	1.5	3.6	17.4	11.7	21.7	8.7	5.6	12.7
4239	Miscellaneous durable goods merchant wholesalers.	4.9	2.1	7.3	6.1	4.9	5.8	4.8	3.8	6.1
424	Merchant wholesalers, nondurable goods	2.9	2.4	4.4	5.7	2.7	5.2	7.0	5.6	8.9
4241	Paper and paper product merchant wholesalers	4.7	3.9	6.3	6.8	5.5	7.9	4.3	3.7	5.4
4242	Drugs and druggists' sundries merchant wholesalers.	6.7	5.6	12.1	22.1	8.5	48.1	6.7	9.0	14.4
4243	Apparel, piece goods, and notions merchant wholesalers	19.1	3.3	19.1	16.5	14.5	17.1	5.0	5.1	6.7

Footnotes available at end of table.

Table B-A6b.
Estimated Measures of Reliability for Shipment Characteristics by NAICS[1]
for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

NAICS code	NAICS description Mode of transportation	Value			Weight			Average distance (GCD) per shipment[2]		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2022	2017		2022	2017		2022	2017	
4244	Grocery and related product merchant wholesalers	2.4	1.6	3.3	5.4	2.5	5.3	11.4	16.0	13.5
4245	Farm product raw material merchant wholesalers.	4.8	6.3	9.4	6.5	3.5	5.3	26.8	43.3	133.5
4246	Chemical and allied products merchant wholesalers	3.3	4.0	5.3	11.2	16.4	23.3	11.4	10.4	15.3
4247	Petroleum and petroleum products merchant wholesalers.	8.1	4.3	10.4	10.1	5.2	9.3	32.5	12.0	73.6
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers	2.7	3.2	4.5	7.7	4.8	8.7	12.3	12.1	13.9
4249	Miscellaneous nondurable goods merchant wholesalers	4.0	3.2	6.4	9.9	5.8	10.5	13.6	8.9	12.9
4541	Electronic shopping and mail-order houses	4.3	2.4	9.2	3.8	8.0	19.1	4.3	3.5	3.1
45431	Fuel dealers.	4.5	3.0	7.0	4.0	4.3	5.0	15.3	7.1	15.4
4931[3]	Warehousing and storage	6.8	2.7	8.4	5.0	4.5	7.5	3.0	6.5	3.8
5111	Newspaper, periodical, book, and directory publishers	12.9	16.0	14.1	13.5	18.6	11.0	S	35.7	S
551114	Corporate, subsidiary, and regional managing offices.	12.6	12.6	37.5	19.7	14.8	60.4	9.4	12.2	9.9

S Withheld because estimate did not meet publication standards.

[1] NAICS codes shown are those covered in the Commodity Flow Survey.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] For tabulation and publication purposes, NAICS 484 is grouped with NAICS 4931.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A7.

Estimated Coefficients of Variation for Shipment Characteristics by Origin State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Origin state	Value (coefficient of variation of number)	Weight (coefficient of variation of number)	Average distance (GCD) per shipment (coefficient of variation of number)[1]
Total.	**1.3**	**1.9**	**2.8**
Alabama.	5.1	7.0	11.1
Alaska.	11.4	S	32.5
Arizona.	5.7	S	12.7
Arkansas.	6.0	11.5	5.6
California.	6.6	12.1	7.7
Colorado.	3.6	8.5	7.6
Connecticut.	8.6	10.8	14.7
Delaware.	17.8	16.1	45.7
District of Columbia.	31.1	36.9	24.7
Florida.	3.9	7.2	10.6
Georgia.	3.8	8.0	4.9
Hawaii.	15.0	22.3	16.1
Idaho.	8.2	12.1	15.0
Illinois.	3.5	8.5	5.5
Indiana.	9.4	9.0	4.2
Iowa.	3.5	6.6	6.5
Kansas.	4.9	7.2	7.8
Kentucky.	6.2	8.9	5.9
Louisiana.	7.7	8.9	15.0
Maine.	5.9	12.9	11.5
Maryland.	5.9	7.3	11.7
Massachusetts.	13.1	11.4	6.8
Michigan.	4.3	10.2	7.8
Minnesota.	8.0	7.6	5.1
Mississippi.	10.5	35.3	18.3
Missouri.	12.1	8.4	9.7
Montana.	13.1	22.4	17.1
Nebraska.	6.5	12.4	12.3
Nevada.	10.1	14.9	9.2
New Hampshire.	7.3	9.2	4.9
New Jersey.	9.5	22.4	10.3
New Mexico.	15.4	S	35.1
New York.	7.6	7.2	16.9
North Carolina.	3.9	10.3	6.1
North Dakota.	12.0	32.1	14.6
Ohio.	3.7	3.7	6.0
Oklahoma.	5.7	9.5	11.6
Oregon.	12.0	9.2	21.4
Pennsylvania.	3.3	10.9	4.2
Rhode Island.	10.7	15.1	15.3
South Carolina.	6.2	10.6	12.1
South Dakota.	4.7	10.2	12.6
Tennessee.	8.4	11.0	8.7
Texas.	6.5	6.7	7.4
Utah.	16.0	31.2	6.3
Vermont.	7.3	29.8	19.3
Virginia.	5.7	10.0	6.1
Washington.	6.2	8.2	40.4
West Virginia.	12.7	16.1	10.3
Wisconsin.	3.0	7.6	8.4
Wyoming.	10.1	27.9	20.8

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-A8.
Estimated Coefficients of Variation for Shipment Characteristics by Destination State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Destination state	Value (coefficient of variation of number)	Weight (coefficient of variation of number)	Average distance (GCD) per shipment (coefficient of variation of number)[1]
Total..	**1.3**	**1.9**	**2.8**
Alabama	3.5	6.7	5.7
Alaska	10.8	S	2.9
Arizona	4.8	S	9.1
Arkansas	5.3	8.8	5.8
California...	5.6	9.2	5.6
Colorado...	3.6	7.6	9.1
Connecticut	4.0	42.9	8.0
Delaware...	6.7	14.8	8.1
District of Columbia	6.1	19.0	12.4
Florida...	3.3	6.7	6.2
Georgia	4.4	7.1	6.9
Hawaii	10.3	18.7	9.8
Idaho	6.6	11.2	6.2
Illinois...	3.5	9.0	8.3
Indiana...	5.3	5.9	7.4
Iowa...	4.9	6.9	4.8
Kansas...	4.7	7.6	3.5
Kentucky...	4.2	13.2	8.6
Louisiana...	7.9	9.2	3.9
Maine..	11.0	12.1	5.9
Maryland...	2.6	11.2	8.6
Massachusetts	8.5	10.5	11.8
Michigan	3.2	5.0	7.7
Minnesota..	5.9	9.1	5.4
Mississippi...	4.7	36.6	7.8
Missouri..	5.2	5.2	6.6
Montana	7.3	19.3	4.5
Nebraska...	4.2	5.8	3.9
Nevada	5.3	16.6	4.7
New Hampshire......................................	9.1	7.1	9.0
New Jersey..	8.8	10.1	12.2
New Mexico	10.2	S	5.7
New York...	4.1	5.9	13.0
North Carolina	3.6	9.0	5.6
North Dakota	7.2	32.2	4.3
Ohio...	3.7	3.7	5.9
Oklahoma	5.7	8.5	5.8
Oregon	2.8	6.5	15.6
Pennsylvania	2.7	6.0	8.7
Rhode Island	5.5	11.1	11.5
South Carolina......................................	4.1	9.2	5.5
South Dakota.......................................	8.0	16.5	3.9
Tennessee..	3.9	10.7	7.8
Texas	4.7	6.2	7.6
Utah...	12.2	17.8	7.4
Vermont	8.3	23.4	13.8
Virginia	2.2	6.4	7.0
Washington	6.1	10.5	26.4
West Virginia	11.6	22.4	10.0
Wisconsin	3.9	4.8	5.6
Wyoming	9.4	20.6	3.6

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Reliability of the Estimates for Temperature Control Series

Table B-T1a.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Mode of Transportation for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Mode of transportation	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[2]
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
All modes	**2.7**	**0.0**	**8.9**	**0.0**	**17.6**
Single modes	**2.8**	**0.4**	**9.0**	**0.7**	**5.3**
Truck[3]	3.0	0.5	9.7	1.0	5.1
For-hire truck	3.7	1.2	7.8	1.8	16.8
Company-owned truck	4.3	1.1	12.4	1.9	3.9
Customer pick-up[4]	7.5	0.3	14.0	0.5	48.6
Rail	11.6	0.2	17.6	0.6	13.6
Water	41.9	0.1	42.8	0.8	15.6
Inland water	S	S	S	S	46.6
Great Lakes	S	S	S	S	S
Deep sea	S	S	S	S	16.2
Multiple waterways	S	S	S	S	S
Air (includes truck and air)	24.1	0.1	27.2	Z	6.7
Pipeline[5]	23.4	Z	23.6	0.2	S
Other single modes[6]	S	S	S	S	S
Multiple modes	**7.0**	**0.4**	**15.8**	**0.3**	**9.5**
Parcel, U.S. Postal Service, or courier	8.9	0.5	13.0	Z	9.5
Truck and rail	14.5	0.1	18.5	0.3	16.0
Truck and water	14.0	Z	21.7	Z	21.9
Rail and water	S	S	S	S	S
Other multiple modes[6]	37.6	Z	37.9	Z	39.4
Unknown modes[7]	**14.8**	**0.1**	**39.3**	**0.5**	**16.6**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[4] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[5] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[6] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[7] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T1b.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Mode of Transportation for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Mode of transportation	Value			Weight			Average distance[2] (GCD) per shipment		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017		2022	2017	
All modes	**2.7**	**3.1**	**6.4**	**8.9**	**2.6**	**14.2**	**17.6**	**11.8**	**24.0**
Single modes	**2.8**	**2.9**	**6.5**	**9.0**	**2.5**	**14.3**	**5.3**	**4.0**	**5.4**
Truck[3]	3.0	2.9	6.8	9.7	1.6	15.4	5.1	4.0	5.3
For-hire truck	3.7	3.8	N	7.8	2.1	N	16.8	7.5	N
Company-owned truck	4.3	3.5	N	12.4	3.6	N	3.9	3.5	N
Customer pick-up[4]	7.5	N	N	14.0	N	N	48.6	N	N
Rail	11.6	14.6	62.3	17.6	24.1	60.6	13.6	6.9	25.0
Water	41.9	18.4	26.0	42.8	24.5	24.2	15.6	33.6	56.3
Inland water	S	24.7	S	S	34.2	S	46.6	S	S
Great Lakes	S	S	S	S	S	S	S	S	S
Deep sea	S	26.1	S	S	35.7	S	16.2	31.7	56.8
Multiple waterways	S	46.9	S	S	41.8	S	S	104.8	S
Air (includes truck and air)	24.1	17.1	8.4	27.2	17.0	10.2	6.7	11.5	12.3
Pipeline[5]	23.4	23.6	145.5	23.6	21.0	47.3	S	S	S
Other single modes[6]	S	S	S	S	S	S	S	S	S
Multiple modes	**7.0**	**7.9**	**10.3**	**15.8**	**7.1**	**21.1**	**9.5**	**10.9**	**13.9**
Parcel, U.S. Postal Service, or courier	8.9	9.2	13.1	13.0	7.3	68.6	9.5	11.0	14.0
Truck and rail	14.5	11.1	37.2	18.5	9.4	32.5	16.0	8.9	9.7
Truck and water	14.0	9.0	3.2	21.7	8.0	5.2	21.9	9.1	23.7
Rail and water	S	19.3	S	S	S	S	S	21.4	S
Other multiple modes[6]	37.6	28.5	0.5	37.9	21.3	0.8	39.4	10.3	15.1
Unknown modes[7]	**14.8**	**N**	**N**	**39.3**	**N**	**N**	**16.6**	**N**	**N**

N Not available or comparable.

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[4] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[5] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[6] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[7] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T2a.
Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Distance Shipped for the United States: 2022
(Estimates are based on data from the 2022 Commodity Flow Survey)

Distance shipped[2]	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
Total	**2.7**	**0.0**	**8.9**	**0.0**
Less than 50 miles	4.3	1.3	6.6	2.2
50 to 99 miles	2.8	0.3	25.9	1.7
100 to 249 miles	7.5	1.0	5.0	1.0
250 to 499 miles	6.2	0.7	14.8	1.1
500 to 749 miles	10.2	0.7	3.4	0.3
750 to 999 miles	6.2	0.3	8.6	0.3
1,000 to 1,499 miles	6.9	0.3	21.1	0.4
1,500 to 1,999 miles	7.6	0.2	25.7	0.3
2,000 miles or more	9.5	0.2	38.7	0.4

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.
[2] Shipments are grouped into distance categories based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere over the surface of that sphere.
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T2b.
Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Distance Shipped for the United States: 2022 and 2017
(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Distance shipped[2]	Value			Weight		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017	
Total	**2.7**	**3.1**	**6.4**	**8.9**	**2.6**	**14.2**
Less than 50 miles	4.3	3.6	9.2	6.6	4.7	12.6
50 to 99 miles	2.8	3.7	6.8	25.9	6.1	41.9
100 to 249 miles	7.5	2.2	12.0	5.0	2.7	7.4
250 to 499 miles	6.2	3.5	11.9	14.8	6.1	26.6
500 to 749 miles	10.2	7.2	19.4	3.4	3.9	7.4
750 to 999 miles	6.2	12.5	20.0	8.6	5.8	15.6
1,000 to 1,499 miles	6.9	5.0	13.2	21.1	2.5	38.6
1,500 to 1,999 miles	7.6	5.7	10.8	25.7	4.9	52.9
2,000 miles or more	9.5	6.7	17.9	38.7	7.6	103.5

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.
[2] Shipments are grouped into distance categories based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere over the surface of that sphere.
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T3a.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Shipment Weight for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

| Shipment weight | Value | | Weight | | Average distance (GCD) per shipment (coefficient of variation of number)[2] |
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
Total	**2.7**	**0.0**	**8.9**	**0.0**	**17.6**
Less than 50 lbs.	7.1	0.5	6.5	0.1	18.0
50 to 99 lbs.	10.9	0.2	6.7	Z	8.0
100 to 499 lbs.	4.3	0.3	2.9	0.2	6.6
500 to 749 lbs.	4.4	0.1	3.7	0.1	12.5
750 to 999 lbs.	8.3	0.2	3.0	0.1	5.0
1,000 to 9,999 lbs.	6.3	1.1	5.0	1.2	4.1
10,000 to 49,999 lbs.	2.8	0.9	13.4	2.0	7.3
50,000 to 99,999 lbs.	11.2	0.4	12.6	0.8	10.2
100,000 lbs. or more.	11.4	0.4	11.2	1.1	9.9

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T3b.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Shipment Weight for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

| Shipment weight | Value | | | Weight | | | Average distance (GCD) per shipment[2] | | |
| | Coefficient of variation of number | | Standard error of percent change | Coefficient of variation of number | | Standard error of percent change | Coefficient of variation of number | | Standard error of percent change |
	2022	2017		2022	2017		2022	2017	
Total	**2.7**	**3.1**	**6.4**	**8.9**	**2.6**	**14.2**	**17.6**	**11.8**	**24.0**
Less than 50 lbs.	7.1	7.1	12.6	6.5	6.7	42.7	18.0	14.9	22.7
50 to 99 lbs.	10.9	7.5	16.2	6.7	4.7	21.7	8.0	5.5	11.1
100 to 499 lbs.	4.3	4.5	9.1	2.9	4.5	8.8	6.6	6.2	8.8
500 to 749 lbs.	4.4	4.0	9.1	3.7	2.8	7.0	12.5	3.7	17.9
750 to 999 lbs.	8.3	3.7	14.9	3.0	2.6	5.6	5.0	3.9	5.4
1,000 to 9,999 lbs.	6.3	4.3	11.2	5.0	2.2	7.6	4.1	3.9	4.6
10,000 to 49,999 lbs.	2.8	4.2	8.1	13.4	3.1	22.4	7.3	2.4	7.0
50,000 to 99,999 lbs.	11.2	6.6	29.9	12.6	8.7	19.5	10.2	2.5	10.4
100,000 lbs. or more.	11.4	12.2	50.0	11.2	15.6	28.2	9.9	5.7	6.0

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T4a.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Two-Digit Commodity for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[2]
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
	All commodities[3]...	**2.7**	**0.0**	**8.9**	**0.0**	**17.6**
01	Live animals and live fish......................................	S	S	S	S	21.0
02	Cereal grains (includes seed)..................................	47.5	Z	44.4	0.5	17.6
03	Agricultural products (excludes animal feed, cereal grains, and forage products)..	6.6	0.3	4.5	0.4	28.3
04	Animal feed, eggs, honey, and other products of animal origin . . .	38.6	0.3	S	S	23.2
05	Meat, poultry, fish, seafood, and their preparations..............	4.4	0.8	7.1	0.9	27.4
06	Milled grain products and preparations and bakery products	5.3	0.2	7.7	0.2	22.3
07	Other prepared foodstuffs and fats and oils.....................	4.4	0.7	27.1	4.0	11.5
08	Alcoholic beverages, and denatured alcohol	3.6	0.3	6.4	0.9	12.9
09	Tobacco products	14.3	Z	20.7	Z	4.1
10	Monumental or building stone.................................	S	S	S	S	S
11	Natural sands	S	S	S	S	S
12	Gravel and crushed stone (excludes dolomite and slate)	S	S	S	S	7.0
13	Other nonmetallic minerals, not elsewhere classified.............	S	S	44.1	Z	29.2
14	Metallic ores and concentrates................................	S	S	S	S	S
15	Coal..	S	S	S	S	S
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)...	22.1	0.1	20.4	0.4	36.7
18	Fuel oils (includes diesel, Bunker C, and biodiesel)	14.2	0.1	14.7	0.4	22.1
19	Other coal and petroleum products, not elsewhere classified.	15.9	0.2	15.2	1.0	13.5
20	Basic chemicals	11.4	0.1	11.6	0.5	17.0
21	Pharmaceutical products......................................	6.4	0.9	17.4	0.1	7.0
22	Fertilizers...	22.3	0.1	36.6	0.8	12.4
23	Chemical products and preparations, not elsewhere classified. ...	13.7	0.1	S	S	12.9
24	Plastics and rubber	S	S	S	S	23.9
25	Logs and other wood in the rough	S	S	S	S	S
26	Wood products	S	S	S	S	S
27	Pulp, newsprint, paper, and paperboard........................	46.3	Z	S	S	20.7
28	Paper or paperboard articles	31.8	Z	49.2	Z	8.7
29	Printed products	S	S	S	S	S
30	Textiles, leather, and articles of textiles or leather	S	S	S	S	22.6
31	Nonmetallic mineral products	S	S	48.2	Z	S
32	Base metal in primary or semifinished forms and in finished basic shapes..	37.0	Z	37.0	Z	23.7
33	Articles of base metal..	S	S	S	S	31.5
34	Machinery	S	S	S	S	26.0
35	Electronic and other electrical equipment and components and office equipment..	21.0	0.1	37.1	0.1	19.7
36	Motorized and other vehicles (including parts)..................	S	S	S	S	22.7
37	Transportation equipment, not elsewhere classified..............	S	S	S	S	S
38	Precision instruments and apparatus...........................	36.6	0.3	49.1	0.1	40.4
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	S	S	S	S	23.5
40	Miscellaneous manufactured products	39.7	Z	S	S	19.0
41	Waste and scrap	S	S	S	S	S
43	Mixed freight..	9.1	1.9	5.4	1.4	16.6

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T4b.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Two-Digit Commodity for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

SCTG Code	Commodity description	Value			Weight			Average distance (GCD) per shipment[2]		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2022	2017		2022	2017		2022	2017	
	All commodities[3].	**2.7**	**3.1**	**6.4**	**8.9**	**2.6**	**14.2**	**17.6**	**11.8**	**24.0**
01	Live animals and live fish.	S	18.3	S	S	18.6	S	21.0	14.8	15.7
02	Cereal grains (includes seed).	47.5	S	S	44.4	S	S	17.6	15.9	14.8
03	Agricultural products (excludes animal feed, cereal grains, and forage products)	6.6	8.0	13.2	4.5	11.3	12.6	28.3	22.6	20.8
04	Animal feed, eggs, honey, and other products of animal origin	38.6	10.2	54.3	S	21.8	S	23.2	21.3	94.8
05	Meat, poultry, fish, seafood, and their preparations.	4.4	2.3	7.2	7.1	2.3	9.7	27.4	15.6	78.2
06	Milled grain products and preparations and bakery products	5.3	12.5	31.1	7.7	8.1	18.7	22.3	15.6	28.4
07	Other prepared foodstuffs and fats and oils.	4.4	3.3	10.9	27.1	3.6	80.7	11.5	8.4	18.2
08	Alcoholic beverages, and denatured alcohol	3.6	10.8	91.8	6.4	9.0	100.7	12.9	34.2	26.9
09	Tobacco products	14.3	17.4	60.8	20.7	31.5	72.6	4.1	25.1	82.0
10	Monumental or building stone.	S	S	S	S	S	S	S	S	S
11	Natural sands	S	S	S	S	38.1	S	S	S	S
12	Gravel and crushed stone (excludes dolomite and slate)	S	26.0	S	S	S	S	7.0	15.0	15.3
13	Other nonmetallic minerals, not elsewhere classified.	S	34.2	S	44.1	42.0	0.7	29.2	43.8	147.8
14	Metallic ores and concentrates.	S	S	S	S	S	S	S	S	S
15	Coal.	S	S	S	S	S	S	S	S	S
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)	22.1	13.4	96.7	20.4	16.7	57.7	36.7	24.2	45.1
18	Fuel oils (includes diesel, Bunker C, and biodiesel)	14.2	27.2	98.3	14.7	36.1	88.0	22.1	S	S
19	Other coal and petroleum products, not elsewhere classified.	15.9	12.1	20.3	15.2	10.7	10.5	13.5	12.7	13.8
20	Basic chemicals	11.4	9.8	11.8	11.6	9.3	11.2	17.0	36.2	37.5
21	Pharmaceutical products.	6.4	8.5	10.4	17.4	9.8	19.2	7.0	9.2	15.3
22	Fertilizers.	22.3	18.4	74.5	36.6	24.1	55.3	12.4	21.9	51.9
23	Chemical products and preparations, not elsewhere classified.	13.7	7.9	14.0	S	12.4	S	12.9	13.2	5.7
24	Plastics and rubber	S	15.1	S	S	26.5	S	23.9	19.4	39.4
25	Logs and other wood in the rough	S	S	S	S	S	S	S	S	S
26	Wood products	S	25.6	S	S	S	S	S	S	S
27	Pulp, newsprint, paper, and paperboard.	46.3	39.0	5.4	S	S	S	20.7	S	S
28	Paper or paperboard articles	31.8	27.1	31.1	49.2	34.1	23.7	8.7	35.5	31.7
29	Printed products	S	29.1	S	S	26.8	S	S	22.5	S
30	Textiles, leather, and articles of textiles or leather	S	42.0	S	S	44.8	S	22.6	S	S
31	Nonmetallic mineral products	S	35.5	S	48.2	43.1	1.6	S	19.8	S
32	Base metal in primary or semifinished forms and in finished basic shapes . . .	37.0	33.9	3.6	37.0	29.9	3.6	23.7	38.8	36.2
33	Articles of base metal.	S	38.6	S	S	37.0	S	31.5	S	S
34	Machinery	S	25.5	S	S	47.0	S	26.0	23.6	34.2
35	Electronic and other electrical equipment and components and office equipment.	21.0	27.0	456.1	37.1	41.6	2586.2	19.7	18.9	21.3
36	Motorized and other vehicles (including parts).	S	15.8	S	S	S	S	22.7	43.3	123.1
37	Transportation equipment, not elsewhere classified.	S	S	S	S	S	S	S	S	S
38	Precision instruments and apparatus.	36.6	29.1	389.6	49.1	31.9	2407.4	40.4	S	S

Footnotes available at end of table.

Table B-T4b.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Two-Digit Commodity for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

SCTG Code	Commodity description	Value			Weight			Average distance (GCD) per shipment[2]		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2022	2017		2022	2017		2022	2017	
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	S	S	S	S	S	S	23.5	S	S
40	Miscellaneous manufactured products	39.7	13.7	6.4	S	37.2	S	19.0	18.9	10.0
41	Waste and scrap	S	S	S	S	S	S	S	S	S
43	Mixed freight.	9.1	4.9	15.4	5.4	3.4	7.1	16.6	3.8	26.5

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[2]
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
	All commodities[3]	**2.7**	**0.0**	**8.9**	**0.0**	**17.6**
010	Live animals and live fish	S	S	S	S	21.0
021	Wheat	S	S	S	S	41.8
022	Corn, except sweet...	17.2	Z	16.8	0.1	14.7
029	Other cereal grains...	S	S	S	S	11.5
031	Fresh or chilled potatoes, except sweet	13.8	0.1	20.1	0.3	12.9
032	Fresh or chilled edible vegetables (except potatoes), and dried vegetables..	8.6	0.2	9.3	0.2	14.1
033	Fruit and nuts, edible, fresh, chilled, or dried	14.2	0.2	12.3	0.2	17.7
034	Soy beans...	26.2	Z	26.2	0.1	31.0
035	Oil seeds and nuts, except olives and soy beans	S	S	S	S	S
036	Bulbs, live plants, and seeds for sowing, not elsewhere classified	24.6	Z	31.8	Z	24.1
039	Fresh-cut flowers, plants, and parts of plants, and other agricultural products	22.8	0.1	20.8	Z	22.2
041	Eggs, cereal straw or husks, forage products, residues and waste from the food industries used in animal feeding, other products of animal origin, not elsewhere classified	29.5	0.1	19.2	0.1	24.2
042	Animal feed preparations......................................	S	S	S	S	17.6
051	Meat and poultry, fresh, chilled, or frozen, meat in brine, dried or smoked...	4.8	0.8	7.5	0.9	27.3
052	Fish (except live), seafood, and their preparations	5.9	0.1	5.5	Z	23.0
053	Preparations, extracts, and juices of meat, fish, or seafood	S	S	S	S	S
061	Wheat flour, groats, and meal.................................	31.4	Z	26.4	Z	11.7
062	Malt, milled rice and corn (broken, flour, groats, and meal, inulin, wheat gluten, milled cereals and other vegetables and grains)..	S	S	S	S	26.2
063	Bakery products and food preparations of cereals, flour, starch or milk..	10.0	0.1	13.4	0.2	18.8
064	Bakery products, including frozen..............................	6.8	0.2	10.7	0.2	28.4
071	Dairy products except beverages and preparations of milk	4.7	0.2	8.8	0.8	13.7
072	Processed or prepared vegetables, fruit, or nuts, except dried or milled, and juices...	17.4	0.4	25.9	0.4	12.0
073	Coffee, tea, and spices, except unprocessed coffee and unfermented tea	26.3	Z	47.9	Z	16.1
074	Animal or vegetable fats, oils, waxes, and their cleavage products, prepared edible fats, and flours and meals of oil seeds (excludes oils and fats for use as biodiesel)	17.4	0.1	19.7	0.2	16.0
075	Sugars confectionery, solid or syrups not containing added flavoring or coloring	28.8	0.1	S	S	11.4
076	Confectionery, cocoa, and cocoa preparations..................	12.9	0.2	12.3	0.1	9.2
077	Edible preparations, not elsewhere classified, and vinegar.......	15.1	0.1	16.6	0.1	32.0
078	Nonalcoholic beverages, not elsewhere classified, and ice	8.4	0.3	40.4	3.8	32.9
081	Malt beer..	5.8	0.3	7.9	0.7	7.9
082	Wine and other fermented beverages	8.9	0.2	11.0	0.1	14.5
083	Spirituous beverages and undenatured ethyl alcohol............	8.4	0.2	8.4	0.1	11.0
084	Denatured ethyl alcohol, not for ingestion or use as biofuel......	36.6	Z	S	S	37.3
090	Tobacco products..	14.3	Z	20.7	Z	4.1
100	Monumental or building stone, except dolomite	S	S	S	S	S
110	Natural sands, except metal-bearing	S	S	S	S	S
120	Gravel and crushed stone, except dolomite and slate............	S	S	S	S	7.0
131	Salt...	S	S	44.1	Z	29.2
132	Natural calcium phosphates, natural aluminum-calcium phosphates, and phosphatic chalk	S	S	S	S	S
133	Dolomite, including monumental, building, and crushed	S	S	S	S	S
139	Other nonmetallic minerals, not elsewhere classified............	S	S	S	S	S
141	Iron ores and concentrates....................................	S	S	S	S	S
149	Metallic ores and concentrates, except iron....................	S	S	S	S	S

Footnotes available at end of table.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[2]
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
151	Nonagglomerated bituminous coal	S	S	S	S	S
159	Coal, except nonagglomerated bituminous coal	S	S	S	S	S
171	Gasoline, and blends of gasoline and 10 percent ethanol	27.9	0.1	27.6	0.3	25.3
172	Aviation turbine fuel (types a and b), and kerosene	38.6	Z	36.5	Z	34.6
175	Ethanol, ethanol blends of more than 10 percent ethanol, and other fuel alcohols...................................	S	S	S	S	33.9
176	Ethanol, for use as biofuels	12.4	Z	14.8	0.1	15.4
181	Fuel oils..	19.9	0.1	18.0	0.3	20.8
182	Blends of fuel oils and biofuel, biodiesel	32.8	Z	35.4	0.2	S
191	Lubricating oils and greases	28.9	Z	43.4	0.4	S
192	Refined petroleum oils and oils obtained from bituminous minerals, not elsewhere classified	40.9	Z	39.3	Z	27.2
193	Gaseous hydrocarbons	31.6	0.1	35.6	0.4	19.2
199	Other products of petroleum refining, and coal products, not elsewhere classified	21.8	0.1	15.6	0.7	25.2
201	Sodium hydroxide (caustic soda) and potassium hydroxide (caustic potash)..	22.0	Z	27.5	Z	17.2
202	Inorganic chemicals, not elsewhere classified..................	16.8	0.1	10.8	0.5	17.8
203	Cyclic hydrocarbons	S	S	S	S	25.0
204	Phenols, phenol-alcohols, aldehydes, cyclic polymers of aldehydes, and acyclic alcohols, and organic acids	17.5	Z	25.0	Z	8.8
205	Organic chemicals, not elsewhere classified....................	18.5	0.1	33.7	0.1	8.4
210	Pharmaceutical products	6.4	0.9	17.4	0.1	7.0
220	Fertilizers and fertilizer materials..............................	22.3	0.1	36.6	0.8	12.4
231	Paints and varnishes, enamels, tanning or dyeing extracts, tannins and their derivatives, inks, lakes, toners, and ink	18.6	Z	28.1	Z	10.9
232	Essential oils and resinoids, and perfumery, cosmetic, or toilet preparations	23.1	Z	37.3	Z	15.6
233	Soap, organic surface-active agents, cleaning preparations, polishes and creams, and scouring preps	28.1	Z	49.4	0.1	12.6
234	Photographic film, plates, paper, paperboard, or textiles, and chemical preps for photographic use	42.5	Z	41.8	Z	S
235	Insecticides, rodenticides, fungicides, herbicides, disinfectants, etc.	31.8	Z	S	S	17.4
239	Other chemical products and preparations: glues, prepared explosives, activated natural mineral products, anti-knock preparations, etc...	30.3	0.1	S	S	28.9
241	Plastics and rubber in primary forms or sheets	S	S	S	S	18.1
242	Manmade fibers and plastics basic shapes and articles	25.1	Z	39.8	Z	25.3
243	Rubber articles	S	S	S	S	24.0
250	Logs and other wood in the rough.............................	S	S	S	S	S
261	Wood chips or particles	S	S	S	S	S
262	Lumber, wood continuously shaped along any of its edges or faces, shingles and shakes....................................	S	S	S	S	S
263	Veneer sheets and sheets for plywood, particle board, fiberboard, plywood, and similar laminated wood	S	S	S	S	S
264	Windows, doors, thresholds, and builders' joinery and carpentry of wood, except shingles and shakes	S	S	48.2	Z	S
269	Other wood products	S	S	S	S	S
271	Pulp of fibrous cellulosic materials............................	S	S	S	S	S
272	Newsprint in large rolls or sheets.............................	S	S	S	S	S
273	Uncoated paper, tissue, and paperboard in large rolls or sheets ..	42.7	Z	21.6	Z	21.2
274	Coated, impregnated, treated, or worked paper and paperboard, in large rolls or sheets.....................................	S	S	S	S	36.3
280	Paper or paperboard articles	31.8	Z	49.2	Z	8.7
291	Printed books, brochures, leaflets, and similar printed products..	S	S	S	S	S
292	Newspapers, journals, and periodicals	S	S	S	S	S
293	Advertising material, commercial or trade catalogues, and similar printed products...................................	S	S	S	S	S

Footnotes available at end of table.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[2]
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
299	Other printed products..	24.6	Z	9.2	Z	S
301	Textile fibers, yarns, and broad woven or knitted fabrics.........	S	S	S	S	S
302	Textile clothing and accessories, and headgear, except safety....	S	S	S	S	25.5
303	extiles and textile articles, not elsewhere classified	S	S	36.5	Z	25.6
304	Leather footwear	S	S	S	S	30.6
305	Leather and articles of leather or allied materials, and dressed fur skins	S	S	S	S	S
311	Hydraulic cements	S	S	S	S	S
312	Ceramic products..	S	S	S	S	S
313	Glass and glass products	S	S	S	S	27.4
319	Other nonmetallic mineral products	S	S	47.1	Z	S
321	Ferro-alloys, and iron and steel in primary or semi-finished forms, or in powders or granules...............................	S	S	S	S	S
322	Flat-rolled products of iron or steel.............................	S	S	S	S	S
323	Bars, rods, angles, shapes, sections, and wire, of iron or steel....	S	S	S	S	S
324	Nonferrous metal, except precious, unwrought, or in finished basic shapes, or in powders or granules	38.4	Z	37.5	Z	19.4
331	Pipes, tubes, and fittings	S	S	S	S	42.5
332	Structures and parts, except prefabricated buildings............	9.2	Z	9.2	Z	37.5
333	Hand tools, cutlery, except of precious metals, interchangeable tools for hand or machine tools,hardware, and industrial fasteners	S	S	S	S	41.7
339	Other articles of metal	S	S	S	S	S
341	Internal-combustion engines and parts	S	S	S	S	S
342	Turbines, boilers, nuclear reactors, and nonelectric engines and motors, except internal-combustion..........................	S	S	S	S	S
343	Pumps, compressors, fans, and ventilating or recycling hoods incorporating a fan	9.2	Z	S	S	S
344	Air-conditioning, refrigerating, or freezing equipment	S	S	S	S	S
345	Materials-handling, excavating, boring, and related machinery and equipment..	S	S	S	S	S
349	Other mechanical machinery, not elsewhere classified	S	S	S	S	29.6
351	Electric motors, generators, rotary or static converters, and transformers..	49.6	Z	S	S	21.6
352	Electric cooking appliances, electro-thermic, or electro-mechanical domestic appliances	37.2	Z	S	S	37.8
353	Line telephone or telegraph apparatus.........................	29.5	Z	28.9	Z	10.7
354	Electronic entertainment products, except parts................	26.5	0.1	36.4	0.1	18.1
355	Computer and electronic office equipment.....................	S	S	S	S	16.2
356	Prepared unrecorded or prerecorded media....................	S	S	S	S	46.5
357	Transmission, and reception apparatus for radio, television, radar, and remote-control...................................	S	S	S	S	S
358	Electronic components and parts	43.0	Z	S	S	11.1
359	Other electronic and electrical equipment, not elsewhere classified	36.0	0.1	S	S	27.6
361	Motorized vehicles for transport of less than 10 people, except motorcycles, armored, and recreational	S	S	S	S	S
362	Motor vehicles for the transport of goods, and road tractors for semi-trailers	S	S	S	S	S
363	Other vehicles..	S	S	S	S	S
364	Motor vehicles parts and accessories except motorcycles and armored fighting vehicles	S	S	S	S	22.7
371	Railway equipment including locomotives and rolling stock, railway track fixtures and fittings, andparts	S	S	S	S	S
372	Aircraft and spacecraft	S	S	S	S	S
373	Ships, boats, and floating structures..........................	S	S	S	S	S

Footnotes available at end of table.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by Three-Digit Commodity for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance (GCD) per shipment (coefficient of variation of number)[2]
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
381	Optical elements, instruments, and apparatus, except photographic and cinematographic	S	S	S	S	S
382	Photographic and photocopying machines.	S	S	S	S	S
383	Surveying, hydrographic, oceanographic, hydrological, meteorological, and geophysical instruments and appliances . .	49.8	Z	S	S	38.9
384	Instruments, apparatus, and appliances for medical, surgical, dental, veterinary, or similar purposes.	40.6	0.2	S	S	40.4
385	Meters and other instruments and apparatus for measuring or process control.	21.2	Z	33.2	Z	8.3
390	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs.	S	S	S	S	23.5
401	Arms and ammunition.	S	S	S	S	S
402	Toys, games, and sporting equipment	S	S	S	S	31.8
409	Miscellaneous manufactured products.	40.6	Z	S	S	19.6
411	Metallic waste and scrap.	S	S	S	S	S
412	Nonmetallic waste and scrap, except from food processing.	S	S	S	S	S
439	Mixed freight	9.1	1.9	5.4	1.4	16.6

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T6a.

Estimated Coefficients of Variation for Shipment Characteristics of Temperature Controlled[1] Shipments by NAICS[2] for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

NAICS code	NAICS description	Value (coefficient of variation of number)	Weight (coefficient of variation of number)	Average distance (GCD) per shipment (coefficient of variation of number)[3]
	Total.	**2.7**	**8.9**	**17.6**
212	Mining (except oil and gas).	S	46.6	S
31-33	Manufacturing	3.2	17.1	11.6
311	Food manufacturing.	2.4	5.8	16.6
312	Beverage and tobacco product manufacturing.	6.0	42.4	15.7
313	Textile mills.	41.4	S	S
314	Textile product mills	S	S	40.5
315	Apparel manufacturing	S	S	S
316	Leather and allied product manufacturing.	S	S	27.5
321	Wood product manufacturing.	S	S	S
322	Paper manufacturing	S	40.1	32.0
323	Printing and related support activities	34.7	46.1	S
324	Petroleum and coal products manufacturing.	12.8	12.2	25.6
325	Chemical manufacturing.	13.5	8.0	6.7
326	Plastics and rubber products manufacturing.	22.5	24.7	16.9
327	Nonmetallic mineral product manufacturing.	46.1	S	S
331	Primary metal manufacturing	S	S	46.2
332	Fabricated metal product manufacturing.	S	S	30.1
333	Machinery manufacturing.	S	S	21.9
334	Computer and electronic product manufacturing	27.5	S	11.5
335	Electrical equipment, appliance, and component manufacturing	39.3	32.2	17.4
336	Transportation equipment manufacturing	S	S	35.2
337	Furniture and related product manufacturing.	S	S	30.4
339	Miscellaneous manufacturing	41.0	38.4	19.2
42	Wholesale trade.	2.8	8.1	4.6
423	Merchant wholesalers, durable goods.	28.1	35.6	33.4
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers	39.2	37.1	35.7
4232	Furniture and home furnishing merchant wholesalers	36.1	48.5	S
4233	Lumber and other construction materials merchant wholesalers	32.2	32.7	20.5
4234	Professional and commercial equipment and supplies merchant wholesalers	29.4	43.7	38.3
4235	Metal and mineral (except petroleum) merchant wholesalers	S	S	S
4236	Household appliances and electrical and electronic goods merchant wholesalers	S	S	S
4237	Hardware, and plumbing and heating equipment and supplies merchant wholesalers	S	S	21.5
4238	Machinery, equipment, and supplies merchant wholesalers	32.2	31.9	25.8
4239	Miscellaneous durable goods merchant wholesalers.	32.3	33.8	28.2
424	Merchant wholesalers, nondurable goods	3.1	8.2	4.5
4241	Paper and paper product merchant wholesalers	47.2	47.7	S
4242	Drugs and druggists' sundries merchant wholesalers.	13.6	S	10.1
4243	Apparel, piece goods, and notions merchant wholesalers	S	S	S
4244	Grocery and related product merchant wholesalers	3.5	5.7	4.3
4245	Farm product raw material merchant wholesalers.	18.9	30.6	30.8
4246	Chemical and allied products merchant wholesalers	10.4	18.8	16.3
4247	Petroleum and petroleum products merchant wholesalers.	17.5	36.9	34.1
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers	2.7	7.8	12.7
4249	Miscellaneous nondurable goods merchant wholesalers	7.6	33.4	16.6
4541	Electronic shopping and mail-order houses.	11.8	20.2	10.7
45431	Fuel dealers.	18.3	18.5	S
4931[4]	Warehousing and storage.	20.0	8.8	7.2
5111	Newspaper, periodical, book, and directory publishers	45.0	46.3	S
551114	Corporate, subsidiary, and regional managing offices.	38.0	14.1	20.0

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] NAICS codes shown are those covered in the CFS. NAICS is the North American Industry Classification System.

[3] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[4] For tabulation and publication purposes, NAICS 484 is grouped with NAICS 4931.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T6b.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by NAICS[2] for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

NAICS code	NAICS description	Value			Weight			Average distance (GCD) per shipment[3]		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2022	2017		2022	2017		2022	2017	
	Total	**2.7**	**3.1**	**6.4**	**8.9**	**2.6**	**14.2**	**17.6**	**11.8**	**24.0**
212	Mining (except oil and gas)	S	47.6	S	46.6	23.0	1.2	S	S	S
31-33	Manufacturing	3.2	2.4	6.3	17.1	4.4	27.3	11.6	10.5	14.9
311	Food manufacturing	2.4	2.5	5.4	5.8	3.7	9.1	16.6	4.6	20.5
312	Beverage and tobacco product manufacturing	6.0	14.0	159.6	42.4	9.0	917.0	15.7	25.9	13.1
313	Textile mills	S	S	S	S	S	S	S	S	S
314	Textile product mills	S	S	S	S	S	S	S	S	S
315	Apparel manufacturing	S	S	S	S	S	S	S	S	S
316	Leather and allied product manufacturing	S	S	S	S	43.9	S	27.5	S	S
321	Wood product manufacturing	S	36.2	S	S	S	S	S	21.9	S
322	Paper manufacturing	S	22.4	S	40.1	S	S	32.0	17.1	10.9
323	Printing and related support activities	34.7	26.2	0.1	46.1	30.7	0.1	S	11.1	S
324	Petroleum and coal products manufacturing	12.8	14.3	24.3	12.2	16.8	12.5	25.6	12.8	24.8
325	Chemical manufacturing	13.5	7.5	14.5	8.0	9.4	9.1	6.7	5.9	9.3
326	Plastics and rubber products manufacturing	22.5	9.8	6.4	24.7	18.4	16.4	16.9	18.8	21.3
327	Nonmetallic mineral product manufacturing	46.1	23.1	2.9	S	43.4	S	S	S	S
331	Primary metal manufacturing	S	33.1	S	S	24.0	S	46.2	35.5	84.7
332	Fabricated metal product manufacturing	S	36.1	S	S	31.6	S	30.1	23.3	73.7
333	Machinery manufacturing	S	20.5	S	S	20.5	S	21.9	13.3	19.7
334	Computer and electronic product manufacturing	27.5	S	S	S	43.6	S	11.5	10.3	15.8
335	Electrical equipment, appliance, and component manufacturing	39.3	31.6	139.1	32.2	46.6	88.1	17.4	24.4	21.1
336	Transportation equipment manufacturing	S	35.9	S	S	S	S	35.2	S	S
337	Furniture and related product manufacturing	S	S	S	S	S	S	30.4	40.6	28.9
339	Miscellaneous manufacturing	41.0	29.2	64.2	38.4	29.0	107.4	19.2	15.6	19.9
42	Wholesale trade	2.8	2.7	5.6	8.1	5.0	14.3	4.6	8.4	7.7
423	Merchant wholesalers, durable goods	28.1	21.6	51.7	35.6	16.6	12.1	33.4	21.1	55.8
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers	39.2	44.4	6.9	37.1	S	S	35.7	28.3	307.1
4232	Furniture and home furnishing merchant wholesalers	36.1	34.5	24.2	48.5	S	S	S	S	S
4233	Lumber and other construction materials merchant wholesalers	32.2	33.7	2.4	32.7	33.8	0.1	20.5	38.2	115.5
4234	Professional and commercial equipment and supplies merchant wholesalers	29.4	28.2	70.6	43.7	28.4	72.2	38.3	22.8	53.4
4235	Metal and mineral (except petroleum) merchant wholesalers	S	34.7	S	S	43.7	S	S	46.3	S
4236	Household appliances and electrical and electronic goods merchant wholesalers	S	S	S	S	S	S	S	31.1	S
4237	Hardware, and plumbing and heating equipment and supplies merchant wholesalers	S	32.8	S	S	47.7	S	21.5	S	S
4238	Machinery, equipment, and supplies merchant wholesalers	32.2	24.3	9.9	31.9	36.6	7.3	25.8	18.1	203.3
4239	Miscellaneous durable goods merchant wholesalers	32.3	23.1	10.9	33.8	46.3	7.5	28.2	33.6	33.7
424	Merchant wholesalers, nondurable goods	3.1	2.5	5.7	8.2	4.9	14.5	4.5	8.8	7.3
4241	Paper and paper product merchant wholesalers	47.2	47.0	57.8	47.7	S	S	S	23.3	S
4242	Drugs and druggists' sundries merchant wholesalers	13.6	8.8	14.0	S	14.8	S	10.1	33.2	55.5

Footnotes available at end of table.

Table B-T6b.

Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled[1] Shipments by NAICS[2] for the United States: 2022 and 2017—Con.

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

NAICS code	NAICS description	Value			Weight			Average distance (GCD) per shipment[3]		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2022	2017		2022	2017		2022	2017	
4243	Apparel, piece goods, and notions merchant wholesalers	S	31.7	S	S	37.4	S	S	10.5	S
4244	Grocery and related product merchant wholesalers	3.5	1.6	5.1	5.7	2.1	7.5	4.3	11.1	8.2
4245	Farm product raw material merchant wholesalers..............	18.9	S	S	30.6	29.8	150.2	30.8	S	S
4246	Chemical and allied products merchant wholesalers	10.4	10.1	10.8	18.8	22.8	27.7	16.3	28.6	36.0
4247	Petroleum and petroleum products merchant wholesalers......	17.5	26.6	87.9	36.9	29.5	87.9	34.1	26.0	30.2
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers	2.7	10.4	74.3	7.8	9.8	91.9	12.7	22.9	12.6
4249	Miscellaneous nondurable goods merchant wholesalers........	7.6	4.5	21.3	33.4	15.9	75.8	16.6	20.9	35.9
4541	Electronic shopping and mail-order houses........................	11.8	7.0	25.0	20.2	22.8	113.5	10.7	9.2	16.5
45431	Fuel dealers...	18.3	17.8	144.7	18.5	22.8	131.0	S	9.0	S
4931[4]	Warehousing and storage...	20.0	9.4	40.0	8.8	8.9	20.7	7.2	30.6	25.9
5111	Newspaper, periodical, book, and directory publishers	S	S	S	S	S	S	S	S	S
551114	Corporate, subsidiary, and regional managing offices...............	38.0	37.9	148.8	14.1	17.9	41.9	20.0	15.6	8.6

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] NAICS codes shown are those covered in the Commodity Flow Survey. NAICS is the North American Industry Classification System.

[3] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[4] For tabulation and publication purposes, NAICS 484 is grouped with NAICS 4931.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T7.

Estimated Coefficients of Variation for Shipment Characteristics of Temperature Controlled[1] Shipments by Origin State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Origin state	Value (coefficient of variation of number)	Weight (coefficient of variation of number)	Average distance (GCD) per shipment (coefficient of variation of number[2]
Total.	**2.7**	**8.9**	**17.6**
Alabama.	24.5	11.2	28.5
Alaska.	30.6	S	S
Arizona.	13.9	18.8	18.6
Arkansas	16.9	21.5	9.4
California	8.2	46.7	18.5
Colorado	19.5	25.3	14.1
Connecticut.	12.4	24.5	21.3
Delaware	S	37.3	S
District of Columbia	34.0	40.2	S
Florida	6.1	9.6	19.2
Georgia	13.7	10.9	23.9
Hawaii.	12.3	13.6	25.0
Idaho.	17.9	12.4	22.1
Illinois	8.9	19.2	24.9
Indiana	S	31.5	18.2
Iowa	14.2	15.8	24.5
Kansas	9.8	9.2	14.6
Kentucky	10.7	9.1	12.2
Louisiana	10.7	15.2	31.2
Maine	6.0	20.3	22.8
Maryland	5.1	7.6	11.0
Massachusetts	22.2	25.4	35.6
Michigan	9.0	12.7	16.6
Minnesota	16.7	12.0	25.3
Mississippi	16.0	22.9	49.6
Missouri	13.9	16.2	21.2
Montana.	23.4	35.1	38.1
Nebraska	12.1	39.8	24.0
Nevada.	14.2	15.4	37.0
New Hampshire	12.6	13.2	21.0
New Jersey	13.2	8.7	43.6
New Mexico.	21.3	21.7	37.8
New York	18.5	12.3	S
North Carolina	11.9	13.2	17.3
North Dakota	18.9	25.3	32.6
Ohio	12.1	9.6	13.0
Oklahoma	12.6	5.2	28.4
Oregon.	18.5	10.1	19.9
Pennsylvania.	11.2	7.1	19.9
Rhode Island.	20.3	23.8	S
South Carolina	10.0	13.0	22.9
South Dakota	18.9	21.0	19.4
Tennessee	7.6	9.6	18.7
Texas.	14.4	9.8	14.6
Utah	47.3	30.0	31.2
Vermont.	19.2	27.7	23.2
Virginia.	7.7	34.8	19.5
Washington.	5.8	5.7	15.4
West Virginia	22.6	23.7	17.4
Wisconsin	9.9	14.0	14.9
Wyoming.	27.3	S	37.9

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-T8.

Estimated Coefficients of Variation for Shipment Characteristics of Temperature Controlled[1] Shipments by Destination State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Destination state	Value (coefficient of variation of number)	Weight (coefficient of variation of number)	Average distance (GCD) per shipment (coefficient of variation of number[2]
Total.	**2.7**	**8.9**	**17.6**
Alabama.	6.1	8.7	30.7
Alaska.	31.6	S	36.4
Arizona.	10.5	23.7	36.3
Arkansas	12.4	19.2	17.0
California	7.5	37.6	15.0
Colorado	18.0	25.3	38.9
Connecticut.	7.5	23.1	31.0
Delaware	10.4	17.8	S
District of Columbia	13.5	9.5	35.5
Florida	4.0	8.4	20.8
Georgia	6.7	20.8	31.6
Hawaii.	11.0	12.1	21.1
Idaho.	25.8	17.9	20.6
Illinois	11.4	18.0	21.4
Indiana	21.3	16.7	10.9
Iowa	11.5	20.1	21.3
Kansas	6.1	12.7	9.9
Kentucky	9.1	7.0	13.1
Louisiana	6.0	18.5	11.9
Maine	6.6	18.8	S
Maryland	4.7	7.8	39.3
Massachusetts	11.6	10.2	31.4
Michigan	20.0	13.3	19.4
Minnesota	14.3	8.4	11.0
Mississippi	11.1	7.3	14.6
Missouri	6.7	19.5	19.3
Montana.	28.2	19.9	19.9
Nebraska	8.3	29.2	7.9
Nevada.	12.3	10.3	23.6
New Hampshire	17.0	16.6	35.6
New Jersey	17.3	12.3	23.4
New Mexico.	27.3	8.7	15.9
New York	13.8	8.0	43.4
North Carolina	9.2	10.7	16.6
North Dakota	13.7	16.2	17.2
Ohio	9.9	18.3	14.7
Oklahoma	11.0	7.0	16.3
Oregon.	11.9	6.5	27.4
Pennsylvania.	4.9	6.8	23.9
Rhode Island.	12.6	25.6	47.8
South Carolina	5.5	9.4	20.1
South Dakota	10.1	17.0	14.0
Tennessee	6.7	8.2	8.9
Texas.	11.2	11.0	16.4
Utah	33.8	24.3	26.9
Vermont.	22.0	29.9	22.3
Virginia.	8.5	10.6	25.9
Washington.	7.3	14.9	10.7
West Virginia	8.2	26.3	21.8
Wisconsin	7.8	8.2	29.3
Wyoming.	31.7	S	16.9

S Withheld because estimate did not meet publication standards.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Reliability of the Estimates for Exports Series

Table B-E1a.
Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation: 2022
(Estimates are based on data from the 2022 Commodity Flow Survey)

Export mode of transportation	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
All modes	**2.2**	**0.0**	**5.3**	**0.0**
Truck[1]	4.1	1.3	10.9	3.0
For-hire truck	3.2	0.9	7.3	1.1
Company-owned truck	41.1	0.9	S	S
Rail	8.4	0.5	11.6	2.1
Water	6.8	1.7	10.5	3.9
Air (included truck and air)	6.5	1.5	10.9	0.2
Pipeline[2]	S	S	7.8	Z
Parcel, U.S. Postal Service, or courier	3.5	0.4	16.7	0.1

S Withheld because estimate did not meet publication standards.
Z Rounds to zero.
[1] "Truck" as a single mode includes shipments that were made by only company-owned truck or only for-hire truck.
[2] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E1b.
Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation: 2022 and 2017
(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Export mode of transportation	Value			Weight		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017	
All modes	**2.2**	**1.4**	**2.3**	**5.3**	**2.8**	**4.6**
Truck[1]	4.1	1.7	5.4	10.9	7.0	16.4
For-hire truck	3.2	1.8	4.4	7.3	5.7	11.0
Company-owned truck	41.1	18.0	61.1	S	30.1	S
Rail	8.4	7.1	16.1	11.6	7.5	13.2
Water	6.8	3.1	6.1	10.5	2.9	6.8
Air (included truck and air)	6.5	2.7	5.4	10.9	6.9	14.3
Pipeline[2]	S	S	S	S	S	S
Parcel, U.S. Postal Service, or courier	3.5	5.5	5.6	16.7	9.6	35.7

S Withheld because estimate did not meet publication standards.
[1] "Truck" as a single mode includes shipments that were made by only company-owned truck or only for-hire truck.
[2] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E2a.

Estimated Measures of Reliability for Export Shipment Characteristics by Domestic Mode of Transportation: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Domestic mode of transportation	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
All modes...	**2.2**	**0.0**	**5.3**	**0.0**
Single modes	**3.1**	**1.3**	**5.7**	**2.8**
Truck..	2.9	1.1	5.9	2.9
For-hire truck	3.0	1.0	6.3	1.7
Company-owned truck	25.3	0.9	S	S
Rail	8.7	0.4	10.4	2.9
Water	17.5	1.1	18.4	3.8
Inland water..	S	S	S	S
Great Lakes	28.1	Z	S	S
Deep sea..	17.4	1.1	18.3	3.6
Multiple waterways.......................................	S	S	S	S
Air (includes truck and air)	9.1	0.5	13.3	Z
Pipeline[1]	10.5	Z	11.9	Z
Multiple modes	**5.1**	**1.2**	**19.6**	**2.2**
Parcel, U.S. Postal Service, or courier	4.6	0.7	15.3	0.1
Truck and rail...	27.0	1.0	24.1	1.4
Truck and water	17.6	0.3	20.8	0.4
Rail and water..	40.6	0.2	43.3	4.3
Other multiple modes[2]	20.5	Z	21.7	Z
Unknown modes[3]...	**22.1**	**0.4**	**42.5**	**0.7**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[2] "Other multiple modes" represent shipments with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[3] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E2b.

Estimated Measures of Reliability for Export Shipment Characteristics by Domestic Mode of Transportation: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Domestic mode of transportation	Value			Weight		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017	
All modes............................	**2.2**	**1.4**	**2.3**	**5.3**	**2.8**	**4.6**
Single modes	**3.1**	**1.3**	**4.0**	**5.7**	**6.5**	**9.5**
Truck.................................	2.9	1.7	9.6	5.9	7.0	20.8
For-hire truck	3.0	1.8	N	6.3	6.1	N
Company-owned truck	25.3	30.2	N	S	33.6	N
Rail	8.7	8.8	19.8	10.4	8.6	18.5
Water	17.5	8.6	15.5	18.4	9.7	12.3
Inland water.......................	S	S	S	S	S	S
Great Lakes	28.1	S	S	S	S	S
Deep sea...........................	17.4	8.8	16.3	18.3	10.2	12.8
Multiple waterways................	S	31.1	S	S	27.2	S
Air (includes truck and air)	9.1	2.7	1.7	13.3	6.9	3.8
Pipeline[1]	S	S	S	S	S	S
Multiple modes	**5.1**	**3.4**	**2.8**	**19.6**	**4.4**	**4.6**
Parcel, U.S. Postal Service, or courier ..	4.6	5.5	7.8	15.3	9.6	34.3
Truck and rail.......................	27.0	27.5	293.8	24.1	31.1	216.2
Truck and water	17.6	3.0	1.5	20.8	7.8	1.7
Rail and water......................	40.6	18.2	2.0	43.3	10.3	8.3
Other multiple modes[2]	20.5	8.7	0.6	21.7	15.9	0.4
Unknown modes[3]...................	**22.1**	**N**	**N**	**42.5**	**N**	**N**

N Not available or comparable.

S Withheld because estimate did not meet publication standards.

[1] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[2] "Other multiple modes" represent shipments with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[3] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E3.

Estimated Measures of Reliability for Export Shipment Characteristics by Selected Domestic Mode Share: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Domestic mode to Port of Exit (POE)[1]	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
Water export mode total	**6.8**	**0.0**	**10.5**	**0.0**
Truck...	5.7	2.2	10.2	2.8
Rail	23.3	1.2	23.1	3.9
Truck and rail	7.4	0.3	39.4	2.6
Water	17.5	2.9	18.4	5.0
Truck and water	14.8	0.7	20.7	0.5
Rail and water..	40.6	0.6	43.3	6.0
Air export mode total...............................	**6.5**	**0.0**	**10.9**	**0.0**
Truck...	8.7	2.1	15.2	3.8
Air (including truck and air)	9.0	1.4	12.5	2.8
Rail export mode total	**8.4**	**0.0**	**11.6**	**0.0**
Rail	7.2	5.1	13.5	2.9
Truck and rail	25.0	5.1	17.7	2.8

[1] Listed under each export mode total row are the domestic modes used for transportation to the Port of Exit (POE).

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E4a.
Estimated Measures of Reliability for Export Shipment Characteristics by Destination: 2022
(Estimates are based on data from the 2022 Commodity Flow Survey)

Destination	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
Total	**2.2**	**0.0**	**5.3**	**0.0**
Canada.	3.8	1.2	10.7	2.2
Mexico	9.3	1.4	11.6	3.7
Rest of Americas	8.0	0.7	23.7	2.1
Europe and Africa	4.1	0.7	11.8	1.2
Asia and Oceania	6.8	1.6	12.5	2.5

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E4b.
Estimated Measures of Reliability for Export Shipment Characteristics by Destination: 2022 and 2017
(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Destination	Value			Weight		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017	
Total	**2.2**	**1.4**	**2.3**	**5.3**	**2.8**	**4.6**
Canada	3.8	3.0	5.6	10.7	5.3	13.1
Mexico.	9.3	4.9	13.0	11.6	10.3	16.2
Rest of Americas.	8.0	6.2	7.6	23.7	15.4	13.6
Europe and Africa.	4.1	4.2	4.4	11.8	9.9	9.5
Asia and Oceania	6.8	3.1	6.0	12.5	9.6	9.9

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E5a.

Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation and Destination: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Export mode of transportation and destination	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
Total	**2.2**	**0.0**	**5.3**	**0.0**
Canada				
All modes	**3.8**	**0.0**	**10.7**	**0.0**
Truck[1]	4.1	1.8	9.6	6.3
For-hire truck..	4.1	1.5	9.9	6.2
Company-owned truck	23.5	0.7	31.4	0.5
Rail..	15.7	1.5	20.8	3.6
Water	46.9	0.4	40.5	7.6
Air (included truck and air)	10.6	0.6	29.3	0.2
Pipeline[2]	S	S	7.8	0.1
Parcel, U.S. Postal Service, or courier	6.2	0.8	10.5	0.1
Mexico				
All modes	**9.3**	**0.0**	**11.6**	**0.0**
Truck[1]	10.5	4.0	26.9	5.0
For-hire truck..	8.5	3.7	4.2	2.8
Company-owned truck	S	S	S	S
Rail..	15.1	1.8	16.3	5.8
Water	43.6	3.9	33.2	6.5
Air (included truck and air)	11.7	0.9	28.6	Z
Pipeline[2]	S	S	S	S
Parcel, U.S. Postal Service, or courier	13.2	0.7	40.4	Z
Rest of Americas				
All modes	**8.0**	**0.0**	**23.7**	**0.0**
Water	13.8	3.6	24.3	1.0
Air (included truck and air)	10.9	3.6	13.9	0.8
Parcel, U.S. Postal Service, or courier	11.6	1.3	24.3	0.3
Europe and Africa				
All modes	**4.1**	**0.0**	**11.8**	**0.0**
Water	5.1	1.9	12.4	1.1
Air (included truck and air)	9.0	2.6	18.3	1.0
Parcel, U.S. Postal Service, or courier	7.1	1.4	31.3	0.4
Asia and Oceania				
All modes	**6.8**	**0.0**	**12.5**	**0.0**
Water	10.0	2.6	12.7	0.4
Air (included truck and air)	7.9	2.1	15.2	0.4
Parcel, U.S. Postal Service, or courier	10.2	1.2	22.2	0.1

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] "Truck" as a single mode includes shipments that were made by only company-owned truck or only for-hire truck.

[2] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E5b.

Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation and Destination: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Export mode of transportation and destination	Value			Weight		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017	
Total	**2.2**	**1.4**	**2.3**	**5.3**	**2.8**	**4.6**
Canada						
All modes	**3.8**	**3.0**	**5.6**	**10.7**	**5.3**	**13.1**
Truck[1]	4.1	3.0	6.2	9.6	6.5	13.9
For-hire truck.	4.1	3.0	6.2	9.9	5.8	14.8
Company-owned truck	23.5	8.5	26.0	31.4	33.3	20.6
Rail.	15.7	10.8	24.8	20.8	6.8	17.4
Water	46.9	42.8	40.4	40.5	25.3	76.9
Air (included truck and air)	10.6	5.9	7.1	29.3	15.3	9.4
Pipeline[2]	S	S	S	S	S	S
Parcel, U.S. Parcel Service, or courier	6.2	7.5	10.9	10.5	8.1	24.4
Mexico						
All modes	**9.3**	**4.9**	**13.0**	**11.6**	**10.3**	**16.2**
Truck[1]	10.5	6.0	14.4	26.9	14.0	42.4
For-hire truck.	8.5	3.0	10.3	4.2	11.7	12.9
Company-owned truck	S	37.9	S	S	39.0	S
Rail.	15.1	8.4	29.8	16.3	16.2	25.9
Water	43.6	21.0	58.7	33.2	21.9	27.1
Air (included truck and air)	11.7	10.6	13.3	28.6	32.1	4.1
Pipeline[2]	S	S	S	S	S	S
Parcel, U.S. Parcel Service, or courier	13.2	8.9	16.2	40.4	14.8	54.3
Rest of America						
All modes	**8.0**	**6.2**	**7.6**	**23.7**	**15.4**	**13.6**
Water	13.8	5.9	11.3	24.3	15.7	13.8
Air (included truck and air)	10.9	11.7	12.3	13.9	18.8	15.1
Parcel, U.S. Postal Service, or courier	11.6	15.2	14.2	24.3	11.5	53.1
Europe and Africa						
All modes	**4.1**	**4.2**	**4.4**	**11.8**	**9.9**	**9.9**
Water	5.1	5.6	5.2	12.4	10.0	9.3
Air (included truck and air)	9.0	6.1	8.2	18.3	16.7	66.5
Parcel, U.S. Postal Service, or courier	7.1	6.7	9.4	31.3	4.5	101.5
Asia and Oceania						
All modes	**6.8**	**3.1**	**6.0**	**12.5**	**9.6**	**9.9**
Water	10	4.5	9.7	12.7	9.7	9.9
Air (included truck and air)	7.9	4.0	6.9	15.2	6.8	20.2
Parcel, U.S. Postal Service, or courier	10.2	8.1	9.0	22.2	23.1	43.8

S Withheld because estimate did not meet publication standards.

[1] "Truck" as a single mode includes shipments that were made by only company-owned truck or only for-hire truck.

[2] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E6a.

Estimated Measures of Reliability for Export Shipment Characteristics by Two-Digit Commodity: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight	
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
	All commodities[1]	**2.2**	**0.0**	**5.3**	**0.0**
01	Live animals and live fish...	S	S	S	S
02	Cereal grains (includes seed).......................................	17.9	0.3	18.0	2.1
03	Agricultural products (excludes animal feed, cereal grains, and forage products)	17.2	0.5	25.9	1.7
04	Animal feed, eggs, honey, and other products of animal origin........	22.1	0.2	25.1	0.7
05	Meat, poultry, fish, seafood, and their preparations	34.2	0.9	S	S
06	Milled grain products and preparations and bakery products..........	20.9	0.1	25.7	0.3
07	Other prepared foodstuffs and fats and oils.........................	11.6	0.2	29.7	0.9
08	Alcoholic beverages, and denatured alcohol	16.0	0.1	18.0	0.1
09	Tobacco products..	22.4	Z	45.3	Z
10	Monumental or building stone......................................	33.4	Z	35.6	Z
11	Natural sands..	46.9	Z	42.8	0.8
12	Gravel and crushed stone (excludes dolomite and slate)..............	32.0	Z	S	S
13	Other nonmetallic minerals, not elsewhere classified.................	18.2	Z	19.6	0.1
14	Metallic ores and concentrates	14.1	0.1	48.1	2.4
15	Coal	23.9	0.2	26.5	2.5
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)	39.9	0.4	38.8	0.9
18	Fuel oils (includes diesel, Bunker C, and biodiesel)...................	35.1	0.5	36.4	1.2
19	Other coal and petroleum products, not elsewhere classified	41.2	0.7	31.6	1.9
20	Basic chemicals	10.0	0.4	16.8	1.3
21	Pharmaceutical products	10.7	0.6	47.2	0.2
22	Fertilizers	S	S	S	S
23	Chemical products and preparations, not elsewhere classified	7.8	0.3	8.7	0.1
24	Plastics and rubber..	5.1	0.2	10.4	0.4
25	Logs and other wood in the rough	S	S	S	S
26	Wood products..	16.6	0.1	13.1	0.2
27	Pulp, newsprint, paper, and paperboard	11.8	0.1	12.9	0.3
28	Paper or paperboard articles	31.2	0.1	21.2	0.1
29	Printed products	24.8	0.1	S	S
30	Textiles, leather, and articles of textiles or leather...................	8.7	0.2	14.2	0.1
31	Nonmetallic mineral products	5.6	0.1	37.1	0.9
32	Base metal in primary or semifinished forms and in finished basic shapes	10.0	0.3	21.3	0.4
33	Articles of base metal	21.6	0.5	12.3	0.1
34	Machinery	5.7	0.4	7.5	0.1
35	Electronic and other electrical equipment and components and office equipment...	9.3	1.5	11.7	0.1
36	Motorized and other vehicles (including parts)	13.8	1.5	10.4	0.3
37	Transportation equipment, not elsewhere classified..................	8.1	0.5	13.8	Z
38	Precision instruments and apparatus	16.1	1.0	34.0	0.1
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	31.4	0.2	24.4	Z
40	Miscellaneous manufactured products..............................	6.8	0.2	14.7	0.1
41	Waste and scrap	21.7	0.4	21.1	1.1
43	Mixed freight	15.1	0.1	21.6	0.1

S Withheld because estimate did not meet publication standards.
Z Rounds to zero.
[1] Estimates exclude shipments of crude petroleum (SCTG 16).
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E6b.

Estimated Measures of Reliability for Export Shipment Characteristics by Two-Digit Commodity: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

SCTG code	Commodity description	Value			Weight		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2022	2017		2022	2017	
	All commodities[1]	**2.2**	**1.4**	**2.3**	**5.3**	**2.8**	**4.6**
01	Live animals and live fish.	S	35.7	S	S	16.5	S
02	Cereal grains (includes seed)	17.9	11.0	25.5	18.0	11.5	14.5
03	Agricultural products (excludes animal feed, cereal grains, and forage products)	17.2	13.1	25.0	25.9	18.8	28.2
04	Animal feed, eggs, honey, and other products of animal origin	22.1	13.9	26.1	25.1	12.4	36.1
05	Meat, poultry, fish, seafood, and their preparations	34.2	8.6	65.5	S	9.2	S
06	Milled grain products and preparations and bakery products	20.9	8.8	27.0	25.7	28.2	36.6
07	Other prepared foodstuffs and fats and oils.	11.6	7.9	20.5	29.7	11.8	36.1
08	Alcoholic beverages, and denatured alcohol	16.0	7.4	16.2	18.0	13.4	20.5
09	Tobacco products.	22.4	36.8	60.1	45.3	42.4	157.4
10	Monumental or building stone	33.4	36.7	12.6	35.6	36.0	24.7
11	Natural sands.	46.9	35.1	32.8	42.8	32.1	40.7
12	Gravel and crushed stone (excludes dolomite and slate). . .	32.0	23.0	84.0	S	29.1	S
13	Other nonmetallic minerals, not elsewhere classified	18.2	7.3	13.7	19.6	15.8	9.5
14	Metallic ores and concentrates	14.1	24.7	16.1	48.1	32.5	82.7
15	Coal	23.9	16.3	35.0	26.5	16.3	13.8
17	Gasoline, aviation turbine fuel, and ethanol (includes kerosene, and fuel alcohols)	39.9	42.8	50.7	38.8	39.2	24.4
18	Fuel oils (includes diesel, Bunker C, and biodiesel).	35.1	23.1	27.7	36.4	29.7	21.1
19	Other coal and petroleum products, not elsewhere classified	41.2	20.1	93.5	31.6	21.1	47.8
20	Basic chemicals.	10.0	14.7	17.1	16.8	19.8	28.6
21	Pharmaceutical products	10.7	13.4	17.4	47.2	38.1	178.9
22	Fertilizers	S	30.7	S	S	42.0	S
23	Chemical products and preparations, not elsewhere classified	7.8	6.4	9.1	8.7	14.9	8.8
24	Plastics and rubber.	5.1	4.7	7.1	10.4	6.9	11.5
25	Logs and other wood in the rough	S	23.4	S	S	29.3	S
26	Wood products.	16.6	11.1	24.9	13.1	23.4	18.0
27	Pulp, newsprint, paper, and paperboard	11.8	6.1	11.1	12.9	5.2	9.6
28	Paper or paperboard articles	31.2	8.4	40.5	21.2	20.1	16.7
29	Printed products	24.8	21.1	32.8	S	9.1	S
30	Textiles, leather, and articles of textiles or leather.	8.7	9.5	10.7	14.2	12.9	12.2
31	Nonmetallic mineral products	5.6	5.6	7.0	37.1	27.0	66.8
32	Base metal in primary or semifinished forms and in finished basic shapes.	10.0	4.1	10.3	21.3	8.2	17.4
33	Articles of base metal	21.6	8.2	25.2	12.3	16.9	10.6
34	Machinery.	5.7	4.9	5.9	7.5	16.0	12.1
35	Electronic and other electrical equipment and components and office equipment.	9.3	7.8	11.4	11.7	27.1	36.2
36	Motorized and other vehicles (including parts)	13.8	13.7	15.9	10.4	14.9	14.7
37	Transportation equipment, not elsewhere classified.	8.1	4.6	5.6	13.8	10.9	46.7
38	Precision instruments and apparatus	16.1	3.7	17.5	34.0	20.6	75.9
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	31.4	28.6	43.5	24.4	23.1	29.6
40	Miscellaneous manufactured products.	6.8	6.4	5.0	14.7	9.2	26.2
41	Waste and scrap	21.7	12.0	23.6	21.1	18.0	12.9
43	Mixed freight	15.1	15.0	16.4	21.6	19.1	16.4

S Withheld because estimate did not meet publication standards.
[1] Estimates exclude shipments of crude petroleum (SCTG 16).
Note: SCTG is Standard Classification of Transported Goods. The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E7.

Estimated Coefficients of Variation for Export Shipment Characteristics by NAICS[1]: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

NAICS code	NAICS description	Value— coefficient of variation of number	Weight— coefficient of variation of number
	Total..	**2.2**	**5.3**
212	Mining (except oil and gas)...	10.2	16.4
31-33	Manufacturing...	2.5	6.9
311	Food manufacturing..	6.2	15.5
312	Beverage and tobacco product manufacturing.......................	28.0	25.1
313	Textile mills..	21.8	28.7
314	Textile product mills..	16.8	22.6
315	Apparel manufacturing...	30.7	S
316	Leather and allied product manufacturing...........................	30.5	28.9
321	Wood product manufacturing.......................................	8.4	11.1
322	Paper manufacturing...	10.1	12.4
323	Printing and related support activities..............................	18.6	S
324	Petroleum and coal products manufacturing.........................	26.1	20.5
325	Chemical manufacturing..	4.7	6.3
326	Plastics and rubber products manufacturing.........................	6.9	17.8
327	Nonmetallic mineral product manufacturing..........................	11.9	24.8
331	Primary metal manufacturing.......................................	9.8	24.2
332	Fabricated metal product manufacturing............................	7.2	9.7
333	Machinery manufacturing...	6.2	9.1
334	Computer and electronic product manufacturing.....................	7.5	26.9
335	Electrical equipment, appliance, and component manufacturing........	15.6	19.1
336	Transportation equipment manufacturing............................	10.9	9.5
337	Furniture and related product manufacturing.........................	22.4	26.3
339	Miscellaneous manufacturing.......................................	15.5	21.4
42	Wholesale trade...	5.2	9.3
423	Merchant wholesalers, durable goods...............................	9.4	16.0
4231	Motor vehicle and motor vehicle parts and supplies merchant wholesalers.............	25.4	21.4
4232	Furniture and home furnishing merchant wholesalers.................	26.2	33.4
4233	Lumber and other construction materials merchant wholesalers........	29.6	S
4234	Professional and commercial equipment and supplies merchant wholesalers...........	27.3	34.2
4235	Metal and mineral (except petroleum) merchant wholesalers..........	40.0	21.2
4236	Household appliances and electrical and electronic goods merchant wholesalers.......	13.5	40.0
4237	Hardware, and plumbing and heating equipment and supplies merchant wholesalers...	17.7	19.2
4238	Machinery, equipment, and supplies merchant wholesalers...........	9.0	28.5
4239	Miscellaneous durable goods merchant wholesalers.................	10.4	17.5
424	Merchant wholesalers, nondurable goods............................	6.2	11.3
4241	Paper and paper product merchant wholesalers......................	S	S
4242	Drugs and druggists' sundries merchant wholesalers.................	25.0	28.8
4243	Apparel, piece goods, and notions merchant wholesalers.............	32.4	40.9
4244	Grocery and related product merchant wholesalers..................	37.8	S
4245	Farm product raw material merchant wholesalers....................	14.8	16.0
4246	Chemical and allied products merchant wholesalers.................	26.0	40.4
4247	Petroleum and petroleum products merchant wholesalers............	32.3	28.1
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers.....	29.5	39.9
4249	Miscellaneous nondurable goods merchant wholesalers.............	37.0	29.4
4541	Electronic shopping and mail-order houses..........................	11.5	13.9
45431	Fuel dealers..	S	S
4931[2]	Warehousing and storage..	13.5	38.4
5111	Newspaper, periodical, book, and directory publishers...............	12.9	18.7
551114	Corporate, subsidiary, and regional managing offices................	15.7	47.0

S Withheld because estimate did not meet publication standards.

[1] NAICS is North American Industry Classification System. NAICS codes shown are those covered in the Commodity Flow Survey.

[2] For tabulation and publication purposes, NAICS 484 is grouped with NAICS 4931.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-E8.
Estimated Measures of Reliability for Export Shipment Characteristics by Origin State: 2022
(Estimates are based on data from the 2022 Commodity Flow Survey)

Origin state	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
Total	**2.2**	**0.0**	**5.3**	**0.0**
Alabama	22.1	0.4	21.2	0.5
Alaska	23.7	0.1	38.4	0.1
Arizona	15.3	0.2	18.9	0.1
Arkansas	19.7	0.1	32.4	0.3
California	13.7	2.1	20.8	2.4
Colorado	15.6	0.1	28.0	0.1
Connecticut	28.4	0.4	31.4	0.1
Delaware	30.5	Z	S	S
District of Columbia	S	S	41.8	Z
Florida	7.4	0.3	19.9	0.3
Georgia	10.6	0.2	14.7	0.1
Hawaii	24.1	Z	28.5	Z
Idaho	25.0	0.1	32.6	0.1
Illinois	17.7	0.8	22.9	1.2
Indiana	13.0	0.3	15.8	0.2
Iowa	16.0	0.2	18.3	0.4
Kansas	13.8	0.1	33.2	0.3
Kentucky	17.1	0.3	28.2	0.3
Louisiana	23.8	0.9	26.7	3.4
Maine	16.5	0.1	38.4	0.1
Maryland	8.2	Z	25.2	0.1
Massachusetts	19.7	0.5	21.4	0.1
Michigan	15.3	0.6	37.5	1.1
Minnesota	14.1	0.4	43.9	2.5
Mississippi	9.1	Z	28.7	0.2
Missouri	20.5	0.2	25.9	0.2
Montana	31.4	0.1	S	S
Nebrasaka	27.2	0.2	S	S
Nevada	15.0	0.1	29.5	Z
New Hampshire	23.2	0.1	S	S
New Jersey	15.6	0.4	37.3	0.4
New Mexico	24.7	0.1	S	S
New York	10.2	0.4	22.6	0.6
North Carolina	15.3	0.5	12.9	0.1
North Dakota	19.0	0.1	36.8	0.4
Ohio	9.5	0.3	14.6	0.3
Oklahoma	12.3	Z	30.0	0.1
Oregon	10.7	0.1	38.3	0.1
Pennsylvania	6.8	0.2	15.8	0.3
Rhode Island	19.5	Z	33.4	0.1
South Carolina	8.1	0.1	18.8	0.2
South Dakota	18.2	Z	33.5	0.1
Tennessee	19.0	0.5	13.3	0.1
Texas	10.7	1.1	15.5	2.6
Utah	21.6	0.2	22.6	0.1
Vermont	21.3	0.1	31.0	Z
Virginia	12.5	0.1	28.8	0.6
Washington	5.8	0.3	20.4	0.7
West Virginia	32.5	0.2	49.4	2.5
Wisconsin	7.5	0.2	17.4	0.3
Wyoming	37.3	Z	41.2	0.7

S Withheld because estimate did not meet publication standards.
Z Rounds to zero.
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Reliability of the Estimates for Hazardous Materials Series

Table B-H1a.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Mode of transportation	Value		Weight		Average distance[1] (GCD) per shipment—coefficient of variation of number
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
All modes	**3.5**	**0.0**	**4.0**	**0.0**	**11.7**
Single modes	**3.6**	**0.5**	**4.3**	**0.6**	**10.0**
Truck[2]	4.2	1.2	5.1	1.4	5.2
For-hire truck	9.8	2.0	9.7	1.6	8.7
Company-owned truck	3.7	1.0	4.0	0.9	5.6
Customer pick-up[3]	11.0	1.1	11.4	1.0	12.5
Rail	10.2	0.7	15.1	1.2	8.2
Water	16.2	0.9	14.6	0.9	13.5
Inland water	34.4	0.7	32.3	0.7	38.4
Great Lakes	S	S	S	S	S
Deep sea	22.1	0.7	19.3	0.7	22.1
Multiple waterways	S	S	S	S	S
Air (includes truck and air)	S	S	S	S	9.7
Pipeline[4]	5.6	0.8	6.5	1.3	S
Other single modes[5]	S	S	S	S	S
Multiple modes	**8.3**	**0.4**	**14.0**	**0.6**	**7.7**
Parcel, U.S. Postal Service, or courier	12.5	0.1	29.4	Z	7.9
Truck and rail	10.8	0.3	15.0	0.5	10.6
Truck and water	22.2	0.2	22.7	0.2	21.7
Rail and water	43.9	Z	38.1	Z	S
Other multiple modes[5]	S	S	S	S	40.7
Unknown modes[6]	**39.5**	**0.3**	**29.5**	**Z**	**29.1**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[3] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[4] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[5] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[6] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-H1b.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Mode of transportation	Value			Weight			Average distance[1] (GCD) per shipment		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017		2022	2017	
All modes	**3.5**	**3.4**	**6.2**	**4.0**	**4.5**	**5.2**	**11.7**	**11.7**	**18.1**
Single modes	**3.6**	**3.5**	**6.4**	**4.3**	**4.6**	**5.3**	**10.0**	**6.7**	**11.0**
Truck[2]	4.2	3.2	5.7	5.1	4.3	4.8	5.2	7.5	8.1
For-hire truck	9.8	5.5	N	9.7	7.1	N	8.7	14.2	N
Company-owned truck	3.7	2.3	N	4.0	2.1	N	5.6	6.8	N
Customer pick-up[3]	11.0	N	N	11.4	N	N	12.5	N	N
Rail	10.2	7.4	52.5	15.1	5.4	43.9	8.2	6.7	8.2
Water	16.2	7.1	14.5	14.6	8.9	7.7	13.5	15.8	26.6
Inland water	34.4	13.4	22.6	32.3	15.2	11.4	38.4	17.9	44.7
Great Lakes	S	S	S	S	S	S	S	S	S
Deep sea	22.1	10.5	26.4	19.3	11.3	14.3	22.1	23.9	23.5
Multiple waterways	S	50.7	S	S	54.0	S	S	92.3	S
Air (includes truck and air)	S	13.4	S	S	28.2	S	9.7	5.1	9.7
Pipeline[4]	5.6	7.7	16.1	6.5	7.7	11.5	S	S	S
Other single modes[5]	S	S	S	S	S	S	S	S	S
Multiple modes	**8.3**	**9.3**	**17.3**	**14.0**	**6.7**	**22.7**	**7.7**	**9.7**	**9.5**
Parcel, U.S. Postal Service, or courier	12.5	9.9	22.0	29.4	16.2	82.5	7.9	10.0	9.8
Truck and rail	10.8	7.9	22.0	15.0	7.0	22.4	10.6	3.1	5.9
Truck and water	22.2	21.8	32.5	22.7	23.6	101.5	21.7	16.2	47.5
Rail and water	43.9	24.1	3.9	38.1	28.6	1.6	S	17.3	S
Other multiple modes[5]	S	25.6	S	S	27.7	S	40.7	10.8	55.4
Unknown modes[6]	**39.5**	**N**	**N**	**29.5**	**N**	**N**	**29.1**	**N**	**N**

N Not available or comparable.

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[3] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[4] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[5] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[6] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-H2a.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Hazard Class for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Hazard class and description	Value		Weight		Average distance[1] (GCD) per shipment—coefficient of variation of number
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
Total...	**3.5**	**0.0**	**4.0**	**0.0**	**11.7**
Class 1, Explosives.....................................	8.6	0.1	12.7	Z	2.4
Class 2, Gases...	13.8	0.9	15.0	1.8	16.3
Class 3, Flammable and combustible liquid.................	4.1	1.2	4.8	1.8	26.4
Class 4, Flammable solid; spontaneously combustible material; dangerous when wet material....................	10.5	Z	8.5	Z	6.4
Class 5, Oxidizers and organic peroxides...................	10.3	0.1	21.1	0.1	11.2
Class 6, Toxic[2] materials and infectious substances.........	33.6	0.4	33.1	0.2	9.0
Class 7, Radioactive material............................	24.4	0.1	21.0	Z	S
Class 8, Corrosive material..............................	5.3	0.2	8.3	0.4	13.3
Class 9, Miscellaneous hazardous material.................	10.6	0.4	12.6	0.3	10.7

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] The words "poison" or "poisonous" are synonymous with the word "toxic."

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Estimates exclude shipments of crude petroleum (SCTG 16).

Table B-H2b.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Hazard Class for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

Hazard class and description	Value			Weight			Average distance[1] (GCD) per shipment		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017		2022	2017	
Total...............................	**3.5**	**3.4**	**6.2**	**4.0**	**4.5**	**5.2**	**11.7**	**11.7**	**18.1**
Class 1, Explosives.......................	8.6	10.8	14.7	12.7	9.4	8.0	2.4	7.4	6.1
Class 2, Gases...........................	13.8	11.7	28.5	15.0	8.9	27.6	16.3	30.3	17.2
Class 3, Flammable and combustible liquid...................................	4.1	4.0	7.4	4.8	4.4	5.3	26.4	13.8	47.2
Class 4, Flammable solid; spontaneously combustible material; dangerous when wet material..............................	10.5	5.0	11.9	8.5	20.6	9.6	6.4	12.3	13.1
Class 5, Oxidizers and organic peroxides................................	10.3	17.9	22.8	21.1	17.3	20.0	11.2	6.1	34.2
Class 6, Toxic[2] materials and infectious substances..............................	33.6	16.3	64.2	33.1	14.1	62.2	9.0	11.5	10.3
Class 7, Radioactive material..............	24.4	18.3	23.9	21.0	16.8	35.4	S	13.8	S
Class 8, Corrosive material................	5.3	5.6	7.2	8.3	17.1	13.6	13.3	10.5	18.5
Class 9, Miscellaneous hazardous material..	10.6	8.8	18.1	12.6	11.0	15.8	10.7	15.8	12.9

S Withheld because estimate did not meet publication standards.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[2] The words "poison" or "poisonous" are synonymous with the word "toxic."

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Estimates exclude shipments of crude petroleum (SCTG 16).

Table B-H3.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Hazard Division for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Hazard class and description	Value		Weight		Average distance[1] (GCD) per shipment— coefficient of variation of number
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
Total.	**3.5**	**0.0**	**4.0**	**0.0**	**11.7**
Division 1.1, Explosives with a mass explosion hazard.	48.1	Z	29.9	Z	22.3
Division 1.2, Explosives with a projection hazard	S	S	S	S	9.8
Division 1.3, Explosives with predominantly a fire hazard	28.7	Z	26.6	Z	17.6
Division 1.4, Explosives with no significant blast hazard	13.0	0.1	22.1	Z	2.1
Division 1.5, Very insensitive explosives, blasting agent	16.7	Z	23.5	Z	13.7
Division 2.1, Flammable gas.	19.5	1.0	23.9	1.9	12.5
Division 2.2, Nonflammable, nonpoisonous compressed gas . . .	8.7	0.2	6.5	0.2	23.7
Division 2.3, Gas poisonous by inhalation	25.5	0.1	25.6	0.1	21.5
Division 4.1, Flammable solid.	15.1	Z	8.7	Z	9.4
Division 4.2, Spontaneously combustible material	23.8	Z	19.8	Z	32.3
Division 4.3, Dangerous when wet material	32.9	Z	26.1	Z	12.8
Division 5.1, Oxidizer	11.6	0.1	21.8	0.1	11.7
Division 5.2, Organic peroxide.	23.1	Z	15.4	Z	11.9
Division 6.1, Toxic (poisonous) materials.	26.0	0.3	33.1	0.2	10.3
Division 6.2, Infectious substances	S	S	S	S	20.3

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Hazard classes 3, 7, 8, and 9 are not separated into divisions and therefore not applicable to this table. Estimates exclude shipments of crude petroleum (SCTG 16).

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for the Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value		Weight		Average distance[2] (GCD) per shipment— coefficient of variation of number
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
	Total	**3.5**	**0.0**	**4.0**	**0.0**	**11.7**
	Subtotal for Selected UN/NA Numbers	**1389**	**10.1**	**1560**	**16.1**	**1287**
1005	Ammonia, anhydrous	18.9	0.1	S	S	15.1
1011	Butane refer also petroleum gases, liquefied	S	S	S	S	22.7
1012	Butylene refer also petroleum gases, liquefied.	S	S	S	S	46.3
1013	Carbon dioxide.	18.0	Z	26.6	Z	27.0
1017	Chlorine.	14.5	Z	16.0	Z	24.9
1038	Ethylene, refrigerated liquid (cryogenic liquid)	S	S	S	S	46.6
1066	Nitrogen, compressed	10.1	Z	16.8	Z	27.4
1072	Oxygen, compressed	11.4	Z	15.6	Z	S
1073	Oxygen, refrigerated liquid (cryogenic liquid)	16.0	Z	26.4	0.3	6.9
1075	Petroleum gases, liquefied or liquefied petroleum gas.	24.7	0.6	29.5	0.8	15.5
1077	Propylene refer also petroleum gases, liquefied.	38.2	0.1	S	S	23.3
1114	Benzene.	S	S	S	S	37.3
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions	13.6	0.2	13.9	0.2	18.1
1179	Ethyl butyl ether	S	S	S	S	S
1202	Diesel fuel, including gas oil or heating oil, light	15.9	1.1	15.5	1.0	33.2
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol	3.9	1.0	4.3	1.1	14.6
1223	Kerosene	23.4	0.1	20.2	Z	41.7
1267	Petroleum crude oil.	S	S	S	S	47.1
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s	16.9	0.2	15.4	0.3	43.1
1270	Petroleum oil	22.8	Z	21.8	0.1	24.2
1307	Xylenes	37.8	0.1	47.2	0.2	24.1
1789	Hydrochloric acid	8.3	Z	8.6	Z	21.9
1791	Hypochlorite solutions	8.1	Z	9.3	Z	15.4
1814	Potassium hydroxide, solution	11.4	Z	13.4	Z	12.3
1824	Sodium hydroxide solution	10.9	0.1	15.2	0.2	10.2
1830	Sulfuric acid with more than 51% acid.	12.4	Z	16.8	0.1	26.0
1845	Carbon dioxide, solid or dry ice	32.2	0.1	31.0	Z	22.1
1863	Fuel, aviation, turbine engine	15.2	0.6	15.6	0.5	24.2
1866	Resin Solution, flammable.	21.7	0.1	20.8	Z	17.4
1918	Isopropylbenzene	15.6	0.1	16.9	Z	38.5
1951	Argon, refrigerated liquid (cryogenic liquid).	15.5	Z	34.7	0.1	26.6
1962	Ethylene.	28.9	0.1	31.3	0.2	S
1971	Methane, compressed or Natural gas, compressed (with high methane content).	39.4	Z	39.0	0.1	33.8
1977	Nitrogen, refrigerated liquid cryogenic liquid	11.7	Z	17.1	0.3	15.5
1978	Propane, refer also petroleum gases, liquefied.	12.0	0.1	14.2	0.2	10.9
1987	Alcohols, n.o.s., including denatured alcohol	8.4	0.1	9.9	0.2	15.9
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s.	8.8	1.5	10.6	1.5	10.0
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt	28.8	0.2	27.0	0.5	26.8
2187	Carbon dioxide, refrigerated liquid	19.4	Z	30.6	0.1	30.2
2312	Phenol, molten.	S	S	S	S	24.7
2448	Sulfur, molten	11.1	Z	6.4	Z	16.1
2672	Ammonia solution, relative density between 0.880 and 0.957 to 15 degrees C in water, with more than 10% but not more than 35% ammonia	24.5	Z	37.1	0.1	13.9
2693	Bisulfites, aqueous solutions, n.o.s	19.5	Z	34.5	Z	18.4
3077	Environmentally hazardous substance, solid, n.o.s., including hazardous waste, solid, n.o.s. or other regulated substances, solid, n.o.s.	28.0	0.2	32.1	0.1	14.0

Footnotes available at end of table.

Table B-H4.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for the Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value		Weight		Average distance[2] (GCD) per shipment— coefficient of variation of number
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s	14.3	0.2	19.9	0.2	13.8
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.)	20.5	0.2	18.5	0.2	9.2
3264	Corrosive liquid, acidic, inorganic, n.o.s	23.1	Z	10.8	Z	12.3
3295	Hydrocarbons, liquid, n.o.s	46.3	Z	45.8	Z	17.3
3334	Aviation regulated liquid, n.o.s., including self-defense spray, nonpressurized, or pepper spray	S	S	S	S	21.2
3475	Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture, with more than 10% ethanol	6.2	Z	6.4	Z	20.1

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Estimates exclude shipments of crude petroleum (SCTG 16).

Table B-H5.

Estimated Measures of Reliability for Hazardous Versus Nonhazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Mode of transportation	Weight				
		Hazardous		Nonhazardous	
	Coefficient of variation of number	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
All modes	**1.9**	**4.0**	**0.9**	**2.6**	**0.9**
Single modes	**1.8**	**4.3**	**1.0**	**2.5**	**1.0**
Truck[1]	2.9	5.1	0.9	3.6	0.9
For-hire truck	2.5	9.7	1.3	2.2	1.3
Company-owned truck.	7.7	4.0	1.0	8.8	1.0
Customer pick-up[2].	5.9	11.4	1.8	6.5	1.8
Rail	6.2	15.1	1.5	5.4	1.5
Water	12.5	14.6	6.4	19.4	6.4
Inland water	20.7	32.3	6.8	29.1	6.8
Great Lakes.	48.5	S	S	48.5	0.0
Deep sea	16.4	19.3	7.7	28.4	7.7
Air (includes truck and air)	7.5	S	S	7.6	1.1
Pipeline[3]	6.1	6.5	1.0	28.1	1.0
Other single modes[4].	34.8	S	S	34.8	0.0
Multiple modes	**7.1**	**14.0**	**1.2**	**6.9**	**1.2**
Parcel, U.S. Postal Service, or courier. . .	3.8	29.4	0.4	3.8	0.4
Truck and rail	8.1	15.0	1.2	8.0	1.2
Truck and water.	10.0	22.7	5.6	11.4	5.6
Rail and water	38.8	38.1	3.6	38.8	1.7
Other multiple modes[4].	S	S	S	S	S
Unknown modes[5]	**15.8**	**29.5**	**2.2**	**16.9**	**2.2**

S Withheld because estimate did not meet publication standards.

[1] "Truck" as a single mode in 2022 includes the new mode of customer pick up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[2] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[3] Estimates for Pipeline exclude shipments of crude petroleum (SCTG 16).

[4] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[5] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-H6.

Estimated Measures of Reliability for Shipment Characteristics by Selected Commodities[1] for Hazardous Materials for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value			Weight		
		Coefficient of variation of number	Hazardous		Coefficient of variation of number	Hazardous	
			Coefficient of variation of number	Standard error of percent of total		Coefficient of variation of number	Standard error of percent of total
	All commodities[2]	**1.3**	**3.5**	**0.3**	**1.9**	**4.0**	**0.9**
	Subtotal for Selected Commodities	**S**	**S**	**S**	**S**	**S**	**S**
17	Gasoline, aviation turbine fuel, and ethanol, including kerosene, and fuel alcohols	3.1	3.1	0.0	3.4	3.4	0.0
18	Fuel oils including diesel, Bunker C, and biodiesel	7.3	7.4	0.3	8.3	8.4	0.2
19	Other coal and petroleum products, not elsewhere classified.	18.6	14.2	3.3	11.7	13.6	3.1
20	Basic chemicals	3.3	5.2	1.8	6.1	6.9	2.0
22	Fertilizers	9.4	15.1	3.3	16.4	32.4	4.2
23	Other chemical products and preparations	5.4	22.9	2.5	15.4	16.5	2.0

S Withheld because estimate did not meet publication standards.

[1] Commodity codes shown had the highest estimated weight without considering sampling variability. Since an "All other SCTG" line is not shown, estimates do not add to total.

[2] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-H7a.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Selected Commodities[1] for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

SCTG code	Commodity description	Value		Weight		Average distance[2] (GCD) per shipment— coefficient of variation of number
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
	All commodities[3]	**3.5**	**0.0**	**4.0**	**0.0**	**11.7**
	Subtotal for Selected Commodities	**S**	**S**	**S**	**S**	**S**
17	Gasoline, aviation turbine fuel, and ethanol, including kerosene, and fuel alcohols	3.1	1.0	3.4	0.9	18.6
18	Fuel oils including diesel, Bunker C, and biodiesel	7.4	1.5	8.4	1.4	9.2
19	Other coal and petroleum products, not elsewhere classified.	14.2	1.4	13.6	1.8	11.8
20	Basic chemicals	5.2	0.6	6.9	1.1	17.2
22	Fertilizers	15.1	0.2	32.4	0.4	13.0
23	Other chemical products and preparations . .	22.9	0.7	16.5	0.2	12.0

S Withheld because estimate did not meet publication standards.

[1] Commodity codes shown had the highest estimated weight without considering sampling variability. Since an "All other SCTG" line is not shown, estimates do not add to total.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] Estimates exclude shipments of crude petroleum (SCTG 16).

Notes: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Percentages represent the proportion of hazardous materials to the two-digit commodity total.

Table B-H7b.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Selected Commodities[1] for the United States: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Surveys)

SCTG code	Commodity description	Value			Weight			Average distance[2] (GCD) per shipment		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2022	2017		2022	2017		2022	2017	
	All commodities[3]	**3.5**	**3.4**	**6.2**	**4.0**	**4.5**	**5.2**	**11.7**	**11.7**	**18.1**
	Subtotal for Selected Commodities	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
17	Gasoline, aviation turbine fuel, and ethanol, including kerosene, and fuel alcohols	3.1	5.4	7.4	3.4	6.1	5.2	18.6	10.6	19.4
18	Fuel oils including diesel, Bunker C, and biodiesel . .	7.4	4.5	11.2	8.4	4.3	7.0	9.2	10.7	11.2
19	Other coal and petroleum products, not elsewhere classified	14.2	10.8	35.5	13.6	8.2	25.4	11.8	16.1	33.6
20	Basic chemicals	5.2	2.8	7.4	6.9	7.4	11.8	17.2	6.5	24.9
22	Fertilizers	15.1	11.2	26.5	32.4	16.9	28.6	13.0	17.7	26.4
23	Other chemical products and preparations	22.9	8.1	23.1	16.5	12.3	17.7	12.0	9.6	13.0

S Withheld because estimate did not meet publication standards.

[1] Commodity codes shown had the highest estimated weight without considering sampling variability. Since an "All other SCTG" line is not shown, estimates do not add to total.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Truck[1] for Intrastate Versus Interstate for Selected UN/NA Numbers[2] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value			Weight		
		Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total	Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total
	Total.	**4.2**	**1.3**	**1.3**	**5.1**	**0.8**	**0.8**
	Subtotal for Selected UN/NA Numbers	**S**	**S**	**S**	**S**	**S**	**S**
1005	Ammonia, anhydrous	17.6	2.3	2.3	16.5	2.4	2.4
1011	Butane refer also petroleum gases, liquefied	S	S	S	S	S	S
1013	Carbon dioxide.	19.7	4.2	4.2	14.7	2.2	2.2
1066	Nitrogen, compressed	13.4	4.7	4.7	26.6	2.9	S
1072	Oxygen, compressed	11.7	2.1	2.1	16.5	2.4	2.4
1073	Oxygen, refrigerated liquid (cryogenic liquid)	15.2	3.6	3.6	20.0	4.4	4.4
1075	Petroleum gases, liquefied or liquefied petroleum gas.	18.1	4.8	4.8	23.6	5.4	5.4
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions	18.5	3.8	3.8	18.9	3.8	3.8
1202	Diesel fuel, including gas oil or heating oil, light	11.3	2.1	2.1	13.1	1.9	1.9
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol.	7.9	1.0	1.0	8.8	1.1	1.1
1219	Isopropanol or Isopropyl alcohol	15.4	4.9	4.9	16.2	4.8	4.8
1223	Kerosene	25.8	2.3	2.3	20.1	1.7	1.7
1230	Methanol	21.8	4.1	4.1	20.2	4.6	4.6
1263	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, liquid lacquer base, and paint related material including paint thinning, drying, removing or reducing compound	23.3	5.8	5.8	24.5	5.2	5.2
1267	Petroleum crude oil.	S	S	S	S	S	S
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s	37.9	7.2	7.2	36.9	6.7	6.7
1270	Petroleum oil.	23.6	13.5	12.4	29.2	S	13.6
1760	Corrosive liquids, n.o.s., including bis (aminopropyl) piperazine, compounds, cleaning liquid or tree killing, ferrous chloride, solution, ferrous chloride, hexanoic acid, isopentanoic acid, methyl norbornene dicarboxylic anhydride, methyl phosphonot	14.4	5.0	5.0	26.1	7.1	7.1
1789	Hydrochloric acid.	9.7	3.9	3.9	12.9	4.7	4.7
1791	Hypochlorite solutions	7.3	1.2	1.2	10.1	1.3	1.3
1805	Phosphoric acid solution	31.8	5.3	5.3	39.6	7.8	7.8
1824	Sodium hydroxide solution	6.7	2.8	2.8	9.5	2.4	2.4
1830	Sulfuric acid with more than 51% acid	9.9	3.8	3.8	13.7	4.3	4.3
1845	Carbon dioxide, solid or dry ice	27.5	8.5	8.5	27.8	1.3	S
1863	Fuel, aviation, turbine engine.	31.8	0.5	0.6	34.6	0.5	0.5
1866	Resin solution, flammable	22.0	5.8	5.8	20.9	6.1	6.1
1942	Ammonium nitrate, with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance	49.6	S	8.4	48.3	S	7.4
1951	Argon, refrigerated liquid (cryogenic liquid)	16.6	3.8	3.8	37.0	4.8	4.8
1956	Compressed gas, n.o.s	15.7	7.6	7.6	28.7	2.8	2.8
1977	Nitrogen, refrigerated liquid cryogenic liquid	12.8	1.6	1.6	11.0	3.3	3.3
1978	Propane, refer also petroleum gases, liquefied	20.4	3.9	S	23.1	4.2	S
1987	Alcohols, n.o.s., including denatured alcohol.	7.2	5.3	5.3	9.1	6.0	6.0
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s.	3.1	1.3	1.3	4.5	1.0	1.0
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt	48.0	S	5.0	43.9	4.2	S
2187	Carbon dioxide, refrigerated liquid	19.6	1.6	1.6	30.3	1.9	1.9
2448	Sulfur, molten	18.7	6.1	6.1	15.0	4.2	4.2
2672	Ammonia solution, relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10% but not more than 35% ammonia	24.6	4.5	4.5	37.1	7.7	S

Footnotes available at end of table.

Table B-H8a.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Truck[1] for Intrastate Versus Interstate for Selected UN/NA Numbers[2] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value			Weight		
		Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total	Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total
2693	Bisulfites, aqueous solutions, n.o.s	15.3	2.9	2.9	17.7	4.6	4.6
2794	Batteries, wet, filled with acid, electric storage	13.3	2.6	2.6	23.5	2.9	2.9
2924	Flammable liquids, corrosive, n.o.s	20.0	7.7	7.7	S	16.6	S
3077	Environmentally hazardous substance, solid, n.o.s., including hazardous waste, solid, n.o.s. or other regulated substances, solid, n.o.s	34.9	11.8	11.8	42.1	S	12.9
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s	10.9	3.0	3.0	10.8	3.8	3.8
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including moltenmetals, molten salts, etc.)	18.5	5.3	5.3	17.9	5.8	5.8
3264	Corrosive liquid, acidic, inorganic, n.o.s	23.8	4.4	4.4	10.6	3.1	3.1
3475	Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture, with more than 10% ethanol	8.1	2.3	2.3	8.4	2.3	2.3

S Withheld because estimate did not meet publication standards.

[1] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[2] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. For purposes of this table, individual shipment data are classified as either completely "interstate" or completely "intrastate." All shipments with the state of destination different from the state of origin are classified as "interstate." All shipments having the state of origin the same as the state of destination are classified as "intrastate."

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Rail for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value			Weight		
		Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total	Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total
	Total.	**10.2**	**5.2**	**5.2**	**15.1**	**4.4**	**4.4**
	Subtotal for Selected UN/NA Numbers	**S**	**S**	**S**	**S**	**S**	**S**
1005	Ammonia, anhydrous	43.4	S	23.5	S	S	S
1010	Butadienes, stabilized or butadienes and hydrocarbon mixture, stabilized containing more than 40% butadienes	S	S	S	26.2	16.0	14.5
1011	Butane refer also petroleum gases, liquefied	S	S	S	S	S	S
1013	Carbon dioxide	S	S	S	S	S	S
1017	Chlorine	15.8	13.0	10.0	22.3	12.5	11.3
1040	Ethylene oxide or ethylene oxide with nitrogen up to a total pressure of 1 MPa (10 bar) at 50 degrees C	S	S	10.1	S	S	11.5
1073	Oxygen, refrigerated liquid (cryogenic liquid)	S	S	24.6	S	S	S
1075	Petroleum gases, liquefied or liquefied petroleum gas	S	13.6	S	S	11.9	S
1077	Propylene refer also petroleum gases, liquefied	S	S	S	S	S	S
1086	Vinyl chloride, stabilized	22.8	S	8.7	26.2	S	9.2
1090	Acetone	S	S	S	S	S	S
1114	Benzene	38.3	24.2	S	S	S	S
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions	16.4	10.4	8.0	21.1	7.9	6.1
1202	Diesel fuel, including gas oil or heating oil, light	38.6	12.7	11.8	38.6	12.8	12.1
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol	29.0	8.4	9.0	30.1	8.5	8.8
1219	Isopropanol or Isopropyl alcohol	31.7	S	S	40.6	S	S
1267	Petroleum crude oil	45.7	2.8	S	40.2	4.5	S
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s.	37.2	15.4	18.0	36.2	12.2	15.4
1270	Petroleum oil	37.7	S	19.9	40.0	S	20.5
1280	Propylene oxide	S	20.6	S	S	21.6	S
1307	Xylenes	24.4	16.2	S	36.8	25.9	S
1789	Hydrochloric acid	27.3	14.2	12.7	11.5	10.9	10.5
1791	Hypochlorite solutions	26.3	14.3	6.3	24.4	13.4	13.5
1805	Phosphoric acid solution	S	44.1	S	S	44.1	S
1814	Potassium hydroxide, solution	21.7	5.7	4.4	21.9	5.9	4.5
1824	Sodium hydroxide solution	27.7	S	9.7	27.5	S	10.1
1830	Sulfuric acid with more than 51% acid	S	12.4	S	S	9.8	S
1863	Fuel, aviation, turbine engine	S	S	S	47.7	12.1	S
1965	Hydrocarbon gas mixture, liquefied, n.o.s.	S	S	S	S	S	S
1977	Nitrogen, refrigerated liquid cryogenic liquid	S	S	S	S	S	S
1978	Propane, refer also petroleum gases, liquefied	22.8	14.9	32.4	22.1	14.3	S
1987	Alcohols, n.o.s., including denatured alcohol	13.9	3.1	3.1	16.3	2.9	2.9
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s	20.5	7.3	7.3	20.4	7.1	7.1
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt	39.1	S	10.9	39.1	S	12.8
2312	Phenol, molten	32.7	14.2	7.0	44.3	14.6	7.4
2448	Sulfur, molten	24.7	S	7.6	21.4	S	7.4
3077	Environmentally hazardous substance, solid, n.o.s., including hazardous waste, solid, n.o.s. or other regulated substances, solid, n.o.s	23.1	11.2	11.5	22.1	10.0	10.5
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s.	25.8	16.1	11.5	29.3	S	12.2

Footnotes available at end of table.

Table B-H8b.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Rail for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value			Weight		
		Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total	Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.)	42.9	S	10.0	41.3	S	9.6
3475	Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture, with more than 10% ethanol.	9.7	S	1.3	10.0	S	1.5

S Withheld because estimate did not meet publication standards.

[1] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. For purposes of this table, individual shipment data are classified as either completely "interstate" or completely "intrastate." All shipments with the state of destination different from the state of origin are classified as "interstate." All shipments having the state of origin the same as the state of destination are classified as "intrastate."

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Water for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value			Weight		
		Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total	Coefficient of variation of number	Intrastate-standard error of percent of total	Interstate—standard error of percent of total
	Total.	**16.2**	**7.4**	**7.4**	**14.6**	**7.2**	**7.2**
	Subtotal for Selected UN/NA Numbers	**S**	**S**	**S**	**S**	**S**	**S**
1005	Ammonia, anhydrous	S	S	S	S	S	S
1114	Benzene	12.3	0.0	S	23.4	0.0	S
1145	Cyclohexane	25.3	0.0	S	17.2	0.0	S
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions	S	S	S	S	S	S
1202	Diesel fuel, including gas oil or heating oil, light	S	S	S	S	S	S
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol.	32.8	4.5	28.5	32.0	4.8	28.5
1223	Kerosene	34.7	S	15.0	31.1	S	15.2
1267	Petroleum crude oil.	S	S	S	S	S	S
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s	18.8	6.8	21.8	17.9	7.2	21.4
1307	Xylenes.	29.0	0.0	S	37.4	0.0	S
1593	Dichloromethane	4.2	S	3.4	4.2	S	2.9
1824	Sodium hydroxide solution	40.1	S	26.1	46.6	S	26.6
1830	Sulfuric acid with more than 51% acid	S	S	S	S	S	S
1863	Fuel, aviation, turbine engine.	40.0	5.5	S	34.5	7.5	S
1888	Chloroform	25.4	S	S	7.3	S	S
1918	Isopropylbenzene	31.1	S	51.6	30.4	S	51.0
1942	Ammonium nitrate, with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance	S	S	S	S	S	S
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s	36.1	8.0	S	38.8	9.5	S
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt	S	S	S	S	S	S
2055	Styrene monomer, stabilized	30.7	S	0.0	31.3	S	0.0
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s.	S	13.2	S	S	11.3	S
3256	Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8 C, at or above its flash point. . . .	29.1	0.0	S	7.8	0.0	S
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.)	S	S	S	S	S	S
3334	Aviation regulated liquid, n.o.s., including self-defense spray, nonpressurized, or pepper spray.	S	S	S	S	S	S

S Withheld because estimate did not meet publication standards.

[1] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. For purposes of this table, individual shipment data are classified as either completely "interstate" or completely "intrastate." All shipments with the state of destination different from the state of origin are classified as "interstate." All shipments having the state of origin the same as the state of destination are classified as "intrastate."

Table B-H8d.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Pipeline for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value			Weight		
		Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total	Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total
	Total.	**5.6**	**3.0**	**3.0**	**6.5**	**2.6**	**2.6**
	Subtotal for Selected UN/NA Numbers	**S**	**S**	**S**	**S**	**S**	**S**
1005	Ammonia, anhydrous	S	S	S	S	S	S
1011	Butane refer also petroleum gases, liquefied	S	S	S	45.2	0.0	S
1012	Butylene refer also petroleum gases, liquefied	S	S	S	S	S	S
1038	Ethylene, refrigerated liquid (cryogenic liquid)	S	S	S	S	S	S
1049	Hydrogen, compressed	30.2	0.2	0.7	39.8	0.5	3.1
1073	Oxygen, refrigerated liquid (cryogenic liquid)	S	S	S	S	S	S
1075	Petroleum gases, liquefied or liquefied petroleum gas.	25.7	5.0	7.7	41.3	4.1	6.6
1077	Propylene refer also petroleum gases, liquefied	39.5	0.0	S	S	S	S
1086	Vinyl chloride, stabilized	17.3	0.0	S	18.5	0.0	S
1114	Benzene	S	S	S	S	S	S
1179	Ethyl butyl ether	S	S	S	S	S	S
1202	Diesel fuel, including gas oil or heating oil, light	17.2	4.8	4.8	16.7	5.0	5.0
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol	7.4	3.5	3.5	7.8	3.6	3.6
1267	Petroleum crude oil	31.8	0.0	S	32.9	0.0	S
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s	25.4	5.4	S	23.7	7.2	S
1280	Propylene oxide	15.6	0.0	S	20.3	0.0	S
1307	Xylenes	S	S	S	S	S	S
1824	Sodium hydroxide solution	S	S	S	S	S	S
1830	Sulfuric acid with more than 51% acid	45.8	0.0	S	S	S	S
1863	Fuel, aviation, turbine engine	21.0	8.5	9.3	21.5	8.8	9.6
1962	Ethylene	18.2	3.6	S	22.0	2.4	S
1965	Hydrocarbon gas mixture, liquefied, n.o.s	26.8	0.0	S	28.6	0.0	S
1969	Isobutane refer also Petroleum gases, liquefied	S	S	S	S	S	S
1971	Methane, compressed or natural gas, compressed (with high methane content)	12.3	0.0	S	6.2	0.0	S
1978	Propane, refer also petroleum gases, liquefied	19.0	5.2	33.8	15.9	6.1	38.5
1987	Alcohols, n.o.s., including denatured alcohol	26.8	11.8	12.9	26.5	11.9	11.8
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s.	26.2	4.1	4.1	28.2	4.5	4.5
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt	37.4	0.9	S	47.6	0.7	S
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s	S	S	S	S	S	S
3295	Hydrocarbons, liquid, n.o.s	S	S	S	S	S	S

S Withheld because estimate did not meet publication standards.

[1] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. For purposes of this table, individual shipment data are classified as either completely "interstate" or completely "intrastate." All shipments with the state of destination different from the state of origin are classified as "interstate." All shipments having the state of origin the same as the state of destination are classified as "intrastate."

Table B-H8e.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Truck-Rail for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value			Weight		
		Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total	Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total
	Total.	**10.8**	**2.3**	**2.3**	**15.0**	**4.1**	**4.1**
	Subtotal for Selected UN/NA Numbers	**S**	**S**	**S**	**S**	**S**	**S**
1005	Ammonia, anhydrous	30.9	S	3.7	S	S	S
1017	Chlorine	27.2	19.3	24.5	15.2	17.3	16.6
1040	Ethylene oxide or ethylene oxide with nitrogen up to a total pressure of 1 MPa (10 bar) at 50 degrees C	S	21.0	S	S	28.8	S
1055	Isobutylene refer also petroleum gases, liquefied. . .	47.4	28.1	18.9	26.5	24.9	27.2
1066	Nitrogen, compressed	S	S	S	S	S	S
1073	Oxygen, refrigerated liquid (cryogenic liquid)	S	S	S	S	S	1.8
1075	Petroleum gases, liquefied or liquefied petroleum gas	36.4	18.0	13.1	32.8	16.9	16.2
1090	Acetone	S	S	S	S	S	S
1114	Benzene	S	S	S	S	S	S
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions	15.7	S	0.1	19.9	S	0.1
1202	Diesel fuel, including gas oil or heating oil, light	25.4	13.0	16.7	30.0	12.9	S
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol	42.8	9.9	S	46.8	12.5	S
1223	Kerosene	S	S	S	49.7	S	S
1268	Petroleum distillates, n.o.s. or petroleum products, n.o.s	23.3	30.5	8.7	29.6	32.4	7.2
1280	Propylene oxide	39.0	19.0	5.2	37.8	18.5	5.7
1495	Sodium chlorate	14.2	2.5	2.8	9.2	2.2	2.8
1744	Bromine or bromine solutions	S	S	S	S	S	S
1791	Hypochlorite solutions	43.0	15.6	7.9	40.2	S	13.9
1805	Phosphoric acid solution	32.2	S	2.0	37.8	S	1.9
1824	Sodium hydroxide solution	21.1	6.2	5.6	19.7	7.3	6.7
1830	Sulfuric acid with more than 51% acid	47.4	S	S	40.1	S	13.6
1834	Sulfuryl chloride	S	S	S	S	S	S
1845	Carbon dioxide, solid or dry ice	S	S	S	S	S	S
1863	Fuel, aviation, turbine engine	40.8	S	S	34.0	S	S
1918	Isopropylbenzene	4.2	S	0.0	4.2	S	0.0
1965	Hydrocarbon gas mixture, liquefied, n.o.s.	S	S	18.2	S	S	19.6
1969	Isobutane refer also petroleum gases, liquefied	S	S	S	S	S	S
1977	Nitrogen, refrigerated liquid cryogenic liquid	37.3	S	S	S	S	S
1978	Propane, refer also petroleum gases, liquefied	S	32.9	S	S	35.2	S
1987	Alcohols, n.o.s., including denatured alcohol	10.3	S	3.9	10.1	7.1	5.8
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s.	20.9	9.3	9.3	21.0	9.2	S
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt	35.6	S	3.6	32.4	22.1	3.7
2020	Chlorophenols, solid	S	S	S	S	S	S
2187	Carbon dioxide, refrigerated liquid	S	S	S	S	S	S
2312	Phenol, molten	S	S	S	S	S	S
2448	Sulfur, molten	S	S	S	34.5	S	3.4
2693	Bisulfites, aqueous solutions, n.o.s	S	S	S	S	S	57.7

Footnotes available at end of table.

Table B-H8e.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Truck-Rail for Intrastate Versus Interstate for Selected UN/NA Numbers[1] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value			Weight		
		Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total	Coefficient of variation of number	Intrastate—standard error of percent of total	Interstate—standard error of percent of total
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s	S	21.3	S	S	21.8	S
3257	Elevated temperature liquid, n.o.s., at or above 100C and below its flash point (including molten metals, molten salts, etc.)	27.9	S	0.1	29.8	S	0.1
3475	Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture, with more than 10% ethanol	15.7	16.7	2.6	16.5	17.1	2.6

S Withheld because estimate did not meet publication standards.

[1] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. For purposes of this table, individual shipment data are classified as either completely "interstate" or completely "intrastate." All shipments with the state of destination different from the state of origin are classified as "interstate." All shipments having the state of origin the same as the state of destination are classified as "intrastate."

Table B-H9.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for Toxic by Inhalation (TIH) for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Description	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
Total	**3.5**	**0.0**	**4.0**	**0.0**
Toxic by inhalation	17.1	0.2	39.7	0.4

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Toxic by inhalation (TIH) gases and volatile liquids that are toxic when inhaled.

Table B-H10.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for Packaging Group I for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Description	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
Total	**3.5**	**0.0**	**4.0**	**0.0**
Packaging Group I	8.4	2.3	9.7	2.4

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Packaging Groups I, II, and III reflect the level of hazard associated with the material being shipped. Packaging Group I is the most rigorous.

Table B-H11a.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for Export by Destination: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Destination	Value		Weight	
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
Total...............................	**13.5**	**0.0**	**17.3**	**0.0**
Canada	9.3	2.5	19.6	3.9
Mexico.............................	33.9	8.0	31.2	9.4
Rest of Americas....................	49.3	6.9	S	S
Europe and Africa...................	19.3	2.6	47.2	4.3
Asia and Oceania	12.6	4.5	33.5	6.2

S Withheld because estimate did not meet publication standards.
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-H11b.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for Export by Destination: 2022 and 2017

(Estimates are based on data from the 2022 and 2017 Commodity Flow Survey)

Destination	Value			Weight		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2022	2017		2022	2017	
Total..........................	13.5	11.8	17.6	17.3	**15.9**	**17.2**
Canada	9.3	15.1	20.1	19.6	17.3	21.6
Mexico..........................	33.9	24.0	54.2	31.2	24.7	35.6
Rest of Americas.................	49.3	18.9	40.6	S	24.1	S
Europe and Africa................	19.3	23.2	21.8	47.2	21.1	37.2
Asia and Oceania	12.6	14.6	17.0	33.5	44.2	23.9

S Withheld because estimate did not meet publication standards.
Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Selected NAICS Code[1] and Mode of Transportation for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

NAICS code	NAICS description and mode of transportation	Value		Weight	
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
00	**All Sectors**				
	All modes.....................	**3.5**	**0.0**	**4.0**	**0.0**
	Single modes.................	**3.6**	**0.5**	**4.3**	**0.6**
	Truck[2]........................	4.2	1.2	5.1	1.4
	For-hire truck...............	9.8	2.0	9.7	1.6
	Company-owned truck.......	3.7	1.0	4.0	0.9
	Customer pick-up[3]...........	11.0	1.1	11.4	1.0
	Rail..........................	10.2	0.7	15.1	1.2
	Water........................	16.2	0.9	14.6	0.9
	Inland water	34.4	0.7	32.3	0.7
	Great Lakes.................	S	S	S	S
	Deep sea	22.1	0.7	19.3	0.7
	Multiple waterways	S	S	S	S
	Air (includes truck and air)	S	S	S	S
	Pipeline[4]......................	5.6	0.8	6.5	1.3
	Other single modes[5]...........	S	S	S	S
	Multiple modes	**8.3**	**0.4**	**14.0**	**0.6**
	Parcel, U.S. Postal Service, or courier	12.5	0.1	29.4	Z
	Truck and rail	10.8	0.3	15.0	0.5
	Truck and water...............	22.2	0.2	22.7	0.2
	Rail and water................	43.9	Z	38.1	Z
	Other multiple modes[5].........	S	S	S	S
	Unknown modes[6].............	**39.5**	**0.3**	**29.5**	**Z**
324	**Petroleum and Coal Products Manufacturing**				
	All modes.....................	**5.7**	**0.0**	**6.3**	**0.0**
	Single modes.................	**6.0**	**0.9**	**6.7**	**0.9**
	Truck[2]........................	17.5	1.8	17.6	2.0
	For-hire truck	18.7	1.7	18.7	2.0
	Company-owned truck.......	32.9	0.1	28.9	0.1
	Customer pick-up[3]...........	39.9	0.4	40.2	0.4
	Rail..........................	18.1	1.5	16.0	1.6
	Water........................	21.8	2.8	21.2	2.7
	Inland water	33.8	1.3	32.7	1.4
	Great Lakes.................	S	S	S	S
	Deep sea	21.0	2.2	21.2	2.0
	Multiple waterways	S	S	S	S
	Air (includes truck and air)	S	S	S	S
	Pipeline[4]......................	7.0	2.2	8.4	2.6
	Other single modes[5]...........	S	S	S	S
	Multiple modes	**23.6**	**0.8**	**24.3**	**0.9**
	Parcel, U.S. Postal Service, or courier	37.2	Z	34.9	Z
	Truck and rail	29.8	0.5	32.7	0.7
	Truck and water...............	28.8	0.6	25.9	0.5
	Rail and water................	38.2	Z	34.0	Z
	Other multiple modes[5].........	S	S	S	S
	Unknown modes[6].............	**33.0**	**Z**	**43.0**	**Z**
325	**Chemical Manufacturing**				
	All modes.....................	**5.5**	**0.0**	**7.9**	**0.0**
	Single modes.................	**5.2**	**1.2**	**9.2**	**2.9**
	Truck[2]........................	4.2	1.1	7.0	2.0
	For-hire truck	5.5	1.1	7.5	1.1
	Company-owned truck.......	6.8	0.5	12.7	1.4
	Customer pick-up[3]...........	14.6	0.5	13.6	0.3
	Rail..........................	10.6	2.0	9.0	1.3

Footnotes available at end of table.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Selected NAICS Code[1] and Mode of Transportation for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

NAICS code	NAICS description and mode of transportation	Value		Weight	
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
	Water	20.5	0.6	25.0	0.7
	Inland water	18.9	0.2	14.9	0.2
	Great Lakes	S	S	S	S
	Deep sea	28.5	0.7	31.0	0.9
	Multiple waterways	S	S	S	S
	Air (includes truck and air)	30.9	0.2	S	S
	Pipeline[4].	15.0	2.5	18.4	4.1
	Other single modes[5]	S	S	S	S
	Multiple modes	**11.0**	**1.2**	**22.6**	**2.9**
	Parcel, U.S. Postal Service, or courier	25.1	0.3	12.8	Z
	Truck and rail	9.6	0.8	21.9	2.6
	Truck and water	S	S	S	S
	Rail and water.	S	S	S	S
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6].	**43.4**	**0.1**	**42.4**	**0.1**
4246	**Chemical and Allied Products Merchant Wholesalers**				
	All modes.	**4.8**	**0.0**	**10.1**	**0.0**
	Single modes	**5.3**	**0.7**	**8.6**	**1.7**
	Truck[2]	5.5	0.8	8.6	6.2
	For-hire truck	12.0	2.7	19.6	2.0
	Company-owned truck.	4.9	2.4	7.9	5.8
	Customer pick-up[3].	13.7	0.7	22.3	0.6
	Rail	23.9	0.4	47.4	4.9
	Water	29.1	0.1	29.6	0.1
	Inland water	S	S	S	S
	Great Lakes	S	S	S	S
	Deep sea	29.2	0.1	29.6	0.1
	Multiple waterways	S	S	S	S
	Air (includes truck and air)	34.4	Z	S	S
	Pipeline[4].	24.7	0.1	25.5	0.3
	Other single modes[5]	S	S	S	S
	Multiple modes	**21.0**	**0.7**	**40.8**	**1.7**
	Parcel, U.S. Postal Service, or courier	35.1	0.5	19.1	Z
	Truck and rail	32.4	0.5	40.3	1.5
	Truck and water	S	S	S	S
	Rail and water.	S	S	S	S
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6].	**21.2**	**Z**	**19.0**	**Z**
4247	**Petroleum and Petroleum Products Merchant Wholesalers**				
	All modes.	**5.8**	**0.0**	**7.1**	**0.0**
	Single modes	**5.5**	**0.7**	**7.2**	**0.4**
	Truck[2]	5.2	2.6	7.0	3.4
	For-hire truck	12.3	3.5	13.2	3.6
	Company-owned truck.	5.7	2.6	6.0	2.5
	Customer pick-up[3].	12.9	2.4	13.4	2.3
	Rail	42.5	2.0	S	S
	Water	S	S	S	S
	Inland water	S	S	S	S
	Great Lakes	S	S	S	S
	Deep sea	S	S	S	S
	Multiple waterways	S	S	S	S

Footnotes available at end of table.

Table B-H12.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Selected NAICS Code[1] and Mode of Transportation for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

NAICS code	NAICS description and mode of transportation	Value		Weight	
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
	Air (includes truck and air)	S	S	S	S
	Pipeline[4]	37.2	0.8	39.1	1.0
	Other single modes[5]	S	S	S	S
	Multiple modes	**34.7**	**0.4**	**33.4**	**0.5**
	Parcel, U.S. Postal Service, or courier	S	S	S	S
	Truck and rail	38.8	0.4	36.9	0.5
	Truck and water	S	S	S	S
	Rail and water.	S	S	S	S
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6].	**42.2**	**0.7**	**39.8**	**0.1**
45431	**Fuel Dealers**				
	All modes.	**4.9**	**0.0**	**5.2**	**0.0**
	Single modes	**4.8**	**0.1**	**5.2**	**0.2**
	Truck[2]	4.9	0.3	5.1	0.3
	For-hire truck	46.3	1.0	S	S
	Company-owned truck.	5.0	1.1	5.7	1.7
	Customer pick-up[3].	42.7	0.3	42.7	0.2
	Rail	S	S	48.0	0.3
	Water	S	S	S	S
	Inland water	S	S	S	S
	Great Lakes	S	S	S	S
	Deep sea	S	S	S	S
	Multiple waterways	S	S	S	S
	Air (includes truck and air)	S	S	S	S
	Pipeline[4]	S	S	S	S
	Other single modes[5]	S	S	S	S
	Multiple modes	**S**	**S**	**39.0**	**0.1**
	Parcel, U.S. Postal Service, or courier	S	S	S	S
	Truck and rail	S	S	38.4	0.1
	Truck and water	S	S	S	S
	Rail and water.	S	S	S	S
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6].	**46.4**	**0.1**	**S**	**S**
4931	**Warehousing and Storage**				
	All modes.	**14.8**	**0.0**	**17.4**	**0.0**
	Single modes	**14.9**	**0.3**	**17.6**	**0.6**
	Truck[2]	11.5	8.4	12.8	9.7
	For-hire truck	16.1	5.5	30.2	7.9
	Company-owned truck.	34.1	3.3	25.1	2.3
	Customer pick-up[3].	18.2	7.1	18.5	9.2
	Rail	S	S	S	S
	Water	S	S	S	S
	Inland water	S	S	S	S
	Great Lakes	S	S	S	S
	Deep sea	S	S	S	S
	Multiple waterways	S	S	S	S
	Air (includes truck and air)	45.7	Z	S	S
	Pipeline[4]	7.1	1.2	7.1	2.3
	Other single modes[5]	S	S	S	S

Footnotes available at end of table.

Table B-H12.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Selected NAICS Code[1] and Mode of Transportation for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

NAICS code	NAICS description and mode of transportation	Value		Weight	
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total
	Multiple modes	**21.9**	**0.3**	**42.9**	**0.1**
	Parcel, U.S. Postal Service, or courier	25.6	0.3	27.0	Z
	Truck and rail	S	S	S	S
	Truck and water	S	S	S	S
	Rail and water................	S	S	S	S
	Other multiple modes[5]	S	S	S	S
	Unknown modes[6]..............	**S**	**S**	**S**	**S**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] NAICS codes shown had the highest estimated weight without considering sampling variability and are shown in descending order. NAICS is North American Industry Classification System.

[2] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[3] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[4] Estimates exclude shipments of code petroleum (SCTG 16).

[5] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[6] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. NAICS codes shown are those covered in the Commodity Flow Survey.

Table B-H13.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics of Temperature Controlled[1] Shipments by Mode of Transportation for the United States: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Mode of transportation	Value		Weight		Average distance[2] (GCD) per shipment—coefficient of variation of number
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
All modes	**7.8**	**0.0**	**6.8**	**0.0**	**21.4**
Single modes	**8.5**	**1.9**	**6.5**	**1.5**	**13.7**
Truck[3]	8.6	2.7	6.9	4.3	12.3
For-hire truck	14.3	3.8	15.7	3.8	12.6
Company-owned truck	9.0	3.5	8.1	4.1	12.3
Customer pick-up[4]	43.0	1.9	40.0	2.0	35.5
Rail	19.6	1.2	40.0	3.4	16.3
Water	S	S	S	S	16.9
Inland water	S	S	S	S	9.8
Great Lakes	S	S	S	S	S
Deep sea	S	S	S	S	47.8
Multiple waterways	S	S	S	S	S
Air (includes truck and air)	S	S	39.4	Z	3.3
Pipeline[5]	29.2	1.0	23.9	0.9	S
Other single modes[6]	S	S	S	S	S
Multiple modes	**21.0**	**1.9**	**29.0**	**1.5**	**7.9**
Parcel, U.S. Postal Service, or courier . .	26.1	1.4	23.4	Z	8.0
Truck and rail	21.2	0.8	30.3	1.5	14.8
Truck and water	36.5	Z	S	S	S
Rail and water	S	S	S	S	S
Other multiple modes[6]	S	S	S	S	34.4
Unknown modes[7]	**32.0**	**0.1**	**31.0**	**0.2**	**19.8**

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

[3] "Truck" as a single mode in 2022 includes the new mode of customer pick-up, as well as for-hire truck and company-owned truck. In 2017, truck as a single mode included only shipments that were made by for-hire truck or company-owned truck.

[4] "Customer pick-up" represents a shipment reported as picked up by the customer. Customer pick-up is a new mode for the 2022 CFS. Estimates did not exist for the 2017 CFS and before. Refer to methodology for more information.

[5] Estimates exclude shipments of crude petroleum (SCTG 16).

[6] "Other mode" (single and multimode) represents a shipment with a valid transportation mode other than the most common designations. Refer to methodology for more information on other modes.

[7] "Unknown mode" represents a shipment reported as unknown mode or with a blank or invalid mode. Efforts were taken to impute the mode where possible. Refer to methodology for more information.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics of Temperature Controlled[1] Shipments by Selected UN/NA Numbers[2] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value		Weight		Average distance[3] (GCD) per shipment—coefficient of variation of number
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
	Total..	**7.8**	**0.0**	**6.8**	**0.0**	**21.4**
	Subtotal for Selected UN/NA Numbers	**1608**	**29.2**	**1839**	**31.2**	**3623**
1005	Ammonia, anhydrous	27.4	2.5	S	S	19.4
1013	Carbon dioxide.	30.2	Z	39.1	0.1	28.8
1049	Hydrogen, compressed	S	S	S	S	S
1066	Nitrogen, compressed	S	S	S	S	S
1072	Oxygen, compressed	S	S	S	S	S
1073	Oxygen, refrigerated liquid (cryogenic liquid).	15.4	0.2	22.3	1.4	14.8
1075	Petroleum gases, liquefied or liquefied petroleum gas	18.9	0.6	19.9	0.6	19.8
1133	Adhesives, containing a flammable liquid.	32.2	0.1	38.4	0.1	13.5
1170	Ethanol or ethyl alcohol or ethanol solutions or ethyl alcohol solutions.	25.8	0.6	37.0	0.8	11.9
1202	Diesel fuel	12.6	0.9	14.7	1.0	S
1203	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol	30.4	3.3	36.4	3.9	20.3
1210	Printing ink, flammable or printing ink related material (including printing ink thinning or reducing compound), flammable	S	S	S	S	S
1223	Kerosene	49.3	0.1	46.4	Z	35.4
1263	Paint related material including paint thinning, drying, removing, or reducing compound.	S	S	S	S	22.0
1268	Petroleum distillates, n.o.s. or Petroleum products, n.o.s	36.0	0.4	32.2	0.2	S
1307	Xylenes.	S	S	S	S	47.1
1791	Hypochlorite solutions	32.4	0.1	38.2	0.4	9.1
1824	Sodium hydroxide solution	18.2	Z	18.5	0.1	19.6
1845	Carbon dioxide, solid or dry ice	35.1	1.2	S	S	14.0
1863	Fuel, aviation, turbine engine.	45.3	0.2	44.7	0.2	S
1951	Argon, refrigerated liquid (cryogenic liquid)	19.5	0.2	19.9	0.2	14.9
1966	Hydrogen, refrigerated liquid (cryogenic liquid). .	31.9	0.1	37.3	0.1	29.0
1977	Nitrogen, refrigerated liquid cryogenic liquid	8.5	0.2	8.9	1.2	13.1
1978	Propane, refer also petroleum gases, liquefied . . .	S	S	S	S	S
1987	Alcohols, n.o.s., including denatured alcohol.	30.2	0.4	39.0	0.5	22.6
1993	Flammable liquids, n.o.s., including anti-freeze, liquid, combustible liquid, n.o.s., compounds, cleaning liquid, tree killing, diesel fuel, fuel oil (no. 1, 2, 4, 5, or 6), or plastic solvent, n.o.s	18.7	2.1	18.1	2.0	18.7
1999	Tars, liquid including road oils and cutback bitumens, including road asphalt	27.3	1.0	35.8	2.1	40.7
2187	Carbon dioxide, refrigerated liquid	21.7	0.3	30.4	1.9	14.9
2209	Formaldehyde solutions, with not less than 25 percent formaldehyde	S	S	S	S	S
2218	Acrylic acid, stabilized	7.3	0.6	7.3	0.2	5.5
2426	Ammonium nitrate, liquid (hot concentrated solution).	44.0	0.2	31.4	0.2	14.7
2448	Sulfur, molten	49.8	0.2	37.2	0.4	31.7
2491	Ethanolamine or ethanolamine solutions	34.5	0.1	35.9	0.1	19.1
2531	Methacrylic acid, stabilized	20.8	0.3	18.7	0.1	13.6
2672	Ammonia solution, relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10 percent but not more than 35 percent ammonia	S	S	S	S	S
3065	Alcoholic beverages	39.5	2.0	30.7	0.1	24.4
3082	Environmentally hazardous substance, liquid, n.o.s., including hazardous waste, liquid, n.o.s., marine pollutants, liquid or solid, n.o.s., or other regulated substances, liquid, n.o.s.	28.3	0.4	26.8	0.1	12.3

Footnotes available at end of table.

Table B-H14.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics of Temperature Controlled[1] Shipments by Selected UN/NA Numbers[2] for the United States: 2022—Con.

(Estimates are based on data from the 2022 Commodity Flow Survey)

UN/NA number	UN/NA description	Value		Weight		Average distance[3] (GCD) per shipment— coefficient of variation of number
		Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
3175	Solids containing flammable liquid, n.o.s	S	S	S	S	S
3256	Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8 C, at or above its flash point	43.4	0.1	S	S	31.6
3257	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.)	35.0	3.5	34.0	3.2	17.6
3264	Corrosive liquid, acidic, inorganic, n.o.s	39.4	Z	S	S	S
3475	Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture, with more than 10% ethanol	25.8	0.5	25.3	0.4	13.6

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] Shipments that are temperature controlled are transported in a vehicle or container that regulates or maintains the temperature when en route to its destination.

[2] UN numbers shown had the highest estimated weight without considering sampling variability. Since an "All other UN numbers" line is not shown, estimates do not add to total.

[3] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-H15.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Origin State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

| Origin state | Value | | Weight | | Average distance[1] (GCD) per shipment— coefficient of variation of number |
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
Total............................	**3.5**	**0.0**	**4.0**	**0.0**	**11.7**
Alabama	9.2	0.1	17.7	0.2	36.4
Alaska	25.3	0.1	38.7	0.1	19.1
Arizona	28.7	0.2	30.5	0.1	24.8
Arkansas........................	25.5	0.1	29.7	0.1	S
California........................	16.7	1.1	22.2	1.5	16.9
Colorado........................	32.6	0.3	28.8	0.2	23.0
Connecticut	13.8	0.2	20.0	0.2	28.4
Delaware........................	23.3	0.1	36.4	0.2	12.3
District of Columbia	S	S	S	S	S
Florida..........................	9.2	0.2	11.2	0.2	33.9
Georgia	23.5	0.4	19.7	0.3	36.5
Hawaii	37.6	0.2	40.0	0.1	19.8
Idaho	28.6	Z	40.8	Z	S
Illinois..........................	13.6	0.7	13.3	0.7	27.3
Indiana..........................	20.7	0.5	20.5	0.5	30.2
Iowa	6.7	0.1	8.7	0.1	30.1
Kansas..........................	19.1	0.3	19.5	0.3	17.0
Kentucky........................	21.7	0.4	21.9	0.5	26.2
Louisiana........................	13.4	1.1	14.3	1.3	30.7
Maine...........................	19.9	0.1	19.8	0.1	S
Maryland........................	14.6	0.1	14.7	0.1	25.9
Massachusetts	12.7	0.2	16.1	0.2	33.6
Michigan	16.8	0.4	21.6	0.4	35.5
Minnesota.......................	30.8	0.5	30.9	0.5	17.2
Mississippi.......................	18.6	0.1	20.0	0.1	26.5
Missouri.........................	15.8	0.2	9.0	Z	31.9
Montana	22.6	0.2	27.4	0.2	22.8
Nebraska........................	15.2	0.1	43.5	0.4	19.7
Nevada	11.5	Z	22.1	Z	28.6
New Hampshire...................	49.7	0.1	S	S	S
New Jersey......................	21.9	0.4	28.5	0.4	26.2
New Mexico	S	S	S	S	17.6
New York........................	20.4	0.6	15.7	0.4	25.2
North Carolina...................	43.1	0.7	13.0	0.2	28.7
North Dakota	11.3	Z	17.2	Z	30.4
Ohio............................	12.3	0.3	15.0	0.4	12.9
Oklahoma.......................	16.4	0.2	14.6	0.2	23.6
Oregon	S	S	45.1	0.1	34.3
Pennsylvania	20.0	0.4	16.8	0.3	18.8
Rhode Island	24.2	Z	21.5	Z	35.5
South Carolina...................	11.3	Z	43.2	0.2	25.7
South Dakota....................	33.1	0.1	45.3	0.3	42.5
Tennessee.......................	21.7	0.3	38.5	0.5	24.6
Texas	6.7	1.8	6.8	2.0	11.9
Utah............................	46.9	1.2	S	S	14.7
Vermont	32.0	Z	47.6	Z	30.5
Virginia	17.3	0.1	15.1	0.1	S
Washington	18.0	0.2	16.5	0.1	22.6
West Virginia	S	S	S	S	32.0
Wisconsin.......................	11.7	0.1	11.0	0.1	16.3
Wyoming	32.7	0.1	29.9	0.1	28.4

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Table B-H16.

Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Destination State: 2022

(Estimates are based on data from the 2022 Commodity Flow Survey)

Destination state	Value		Weight		Average distance[1] (GCD) per shipment— coefficient of variation of number
	Coefficient of variation of number	Standard error of percent of total	Coefficient of variation of number	Standard error of percent of total	
Total	**3.5**	**0.0**	**4.0**	**0.0**	**11.7**
Alabama.	10.0	0.1	13.1	0.2	47.9
Alaska.	23.2	0.1	36.7	0.1	S
Arizona.	26.3	0.2	34.2	0.2	13.2
Arkansas	21.2	0.1	20.8	0.1	32.9
California	17.6	1.3	22.8	1.8	27.4
Colorado	27.6	0.3	26.3	0.3	13.5
Connecticut.	16.9	0.1	21.2	0.1	19.2
Delaware	29.3	0.1	32.0	0.2	39.9
District of Columbia	18.5	Z	17.5	Z	22.9
Florida	23.7	0.6	9.7	0.2	13.4
Georgia	21.5	0.4	18.4	0.3	14.9
Hawaii.	35.1	0.2	38.0	0.1	29.9
Idaho.	31.9	Z	31.2	Z	S
Illinois	11.3	0.5	12.6	0.6	32.1
Indiana	20.2	0.5	20.3	0.4	22.9
Iowa	6.8	Z	26.2	0.2	15.9
Kansas	16.5	0.2	12.8	0.2	20.9
Kentucky	26.0	0.5	29.1	0.6	22.3
Louisiana	18.1	1.1	18.0	1.4	22.2
Maine	20.0	0.1	19.7	0.1	S
Maryland	12.9	0.1	14.5	0.1	21.8
Massachusetts	22.7	0.5	26.2	0.4	27.9
Michigan.	10.5	0.3	16.2	0.3	17.3
Minnesota	28.3	0.4	27.3	0.5	37.7
Mississippi	19.3	0.2	18.9	0.2	18.3
Missouri	14.4	0.2	19.3	0.2	30.3
Montana.	26.6	0.2	29.5	0.2	26.8
Nebraska	20.0	0.1	34.8	0.2	20.8
Nevada.	42.2	0.2	S	S	16.7
New Hampshire	20.7	0.1	21.4	0.1	S
New Jersey	15.9	0.2	15.8	0.2	12.8
New Mexico.	33.2	0.1	38.5	0.1	15.8
New York	13.9	0.4	10.7	0.3	20.7
North Carolina	9.1	0.2	9.0	0.2	21.2
North Dakota	13.3	Z	11.3	Z	11.9
Ohio	12.6	0.4	14.3	0.4	9.7
Oklahoma	14.1	0.2	14.2	0.2	23.6
Oregon.	20.5	0.1	21.6	0.1	14.5
Pennsylvania	12.9	0.3	13.2	0.3	20.9
Rhode Island	19.6	Z	23.3	Z	30.3
South Carolina	16.1	0.1	14.0	0.1	20.2
South Dakota	39.0	0.1	S	S	S
Tennessee	21.4	0.3	33.1	0.5	17.3
Texas.	6.0	1.8	5.7	2.0	22.2
Utah	33.8	0.5	33.9	0.4	24.4
Vermont.	29.0	0.1	28.7	0.1	S
Virginia.	12.6	0.1	14.5	0.1	23.8
Washington.	20.5	0.2	21.7	0.1	14.4
West Virginia.	36.8	0.3	40.8	0.4	34.2
Wisconsin	5.8	0.1	7.1	0.1	16.2
Wyoming	26.2	0.1	25.1	0.1	23.9

S Withheld because estimate did not meet publication standards.

Z Rounds to zero.

[1] In 2022, shipment distance (miles) is based on Great Circle Distance (GCD). GCD is the shortest distance between two points on the surface of a sphere. In 2017, shipment distance (miles) were based on estimated routed miles on a transportation network.

Note: The "2022 CFS Methodology" section provides information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions.

Appendix A.

Reference List: 2022 CFS Publication Tables to Data.census.gov Tables—Con.

Publication table	Publication table title	data.census.gov table
A1a	Shipment Characteristics by Mode of Transportation for the United States: 2022	CF2200A01
A1b	Shipment Characteristics by Mode of Transportation for the United States: 2022 and 2017	CF2200A01
A2a	Shipment Characteristics by Distance Shipped for the United States: 2022	CF2200A02
A2b	Shipment Characteristics by Distance Shipped for the United States: 2022 and 2017	CF2200A02
A3a	Shipment Characteristics by Shipment Weight for the United States: 2022	CF2200A03
A3b	Shipment Characteristics by Shipment Weight for the United States: 2022 and 2017	CF2200A03
A4a	Shipment Characteristics by Two-Digit Commodity for the United States: 2022	CF2200A05
A4b	Shipment Characteristics by Two-Digit Commodity for the United States: 2022 and 2017	CF2200A05
A5	Shipment Characteristics by Three-Digit Commodity for the United States: 2022	CF2200A05
A6a	Shipment Characteristics by NAICS for the United States: 2022	CF2200A04
A6b	Shipment Characteristics by NAICS for the United States: 2022 and 2017	CF2200A04
A7	Shipment Characteristics by Origin State: 2022	CF2200A16
A8	Shipment Characteristics by Destination State: 2022	CF2200A16
A8	Shipment Characteristics by Origin State: 2017	CF1700A20
T1a	Shipment Characteristics of Temperature Controlled Shipments by Mode of Transportation for the United States: 2022	CF2200TC01
T1b	Shipment Characteristics of Temperature Controlled Shipments by Mode of Transportation for the United States: 2022 and 2017	CF2200TC01
T2a	Shipment Characteristics of Temperature Controlled Shipments by Distance Shipped for the United States: 2022	CF2200TC02
T2b	Shipment Characteristics of Temperature Controlled Shipments by Distance Shipped for the United States: 2022 and 2017	CF2200TC02
T3a	Shipment Characteristics of Temperature Controlled Shipments by Shipment Weight for the United States: 2022	CF2200TC03
T3b	Shipment Characteristics of Temperature Controlled Shipments by Shipment Weight for the United States: 2022 and 2017	CF2200TC03
T4a	Shipment Characteristics of Temperature Controlled Shipments by Two-Digit Commodity for the United States: 2022	CF2200TC05
T4b	Shipment Characteristics of Temperature Controlled Shipments by Two-Digit Commodity for the United States: 2022 and 2017	CF2200TC05
T5	Shipment Characteristics of Temperature Controlled Shipments by Three-Digit Commodity for the United States: 2022	CF2200TC05
T6a	Shipment Characteristics of Temperature Controlled Shipments by NAICS for the United States: 2022	CF2200TC04
T6b	Shipment Characteristics of Temperature Controlled Shipments by NAICS for the United States: 2022 and 2017	CF2200TC04
T7	Shipment Characteristics of Temperature Controlled Shipments by Origin State: 2022	CF2200TC12
T8	Shipment Characteristics of Temperature Controlled Shipments by Destination State: 2022	CF2200TC13
T7b	Shipment Characteristics of Temperature Controlled Shipments by NAICS for the United States: 2017 and 2012	CF1700TC05
T8	Shipment Characteristics of Temperature Controlled Shipments by Origin State: 2017	CF1700TC13
E1a	Export Shipment Characteristics by Export Mode of Transportation: 2022	CF2200E1
E1b	Export Shipment Characteristics by Export Mode of Transportation: 2022 and 2017	CF2200E1
E2a	Export Shipment Characteristics by Domestic Mode of Transportation: 2022	CF2200E2
E2b	Export Shipment Characteristics by Domestic Mode of Transportation: 2022 and 2017	CF2200E2
E3	Export Shipment Characteristics by Selected Domestic Mode Share: 2022	CF2200E8
E4a	Export Shipment Characteristics by Destination: 2022	CF2200E3
E4b	Export Shipment Characteristics by Destination: 2022 and 2017	CF2200E3
E5a	Export Shipment Characteristics by Export Mode of Transportation and Destination: 2022	CF2200E4
E5b	Export Shipment Characteristics by Export Mode of Transportation and Destination: 2022 and 2017	CF2200E4
E6a	Export Shipment Characteristics by Two-Digit Commodity: 2022	CF2200E5

Publication table	Publication table title	data.census.gov table
E6b	Export Shipment Characteristics by Two-Digit Commodity: 2022 and 2017	CF2200E5
E7	Export Shipment Characteristics by NAICS: 2022	CF2200E7
E8	Export Shipment Characteristics by Origin State: 2022	CF2200E6
H1a	Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022	CF2200H01
H1b	Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022 and 2017	CF2200H01
H2a	Hazardous Material Shipment Characteristics by Hazard Class for the United States: 2022	CF2200H02
H2b	Hazardous Material Shipment Characteristics by Hazard Class for the United States: 2022 and 2017	CF2200H02
H3	Hazardous Material Shipment Characteristics by Hazard Division for the United States: 2022	CF2200H02
H4	Hazardous Material Shipment Characteristics for the Selected UN/NA Numbers for the United States: 2022	CF2200H03
H5	Hazardous Versus Nonhazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022	CF2200H04
H6	Shipment Characteristics by Selected Commodities for Hazardous Materials for the United States: 2022	CF2200H08
H7a	Hazardous Material Shipment Characteristics by Selected Commodities for the United States: 2022	CF2200H09
H7b	Hazardous Material Shipment Characteristics by Selected Commodities for the United States: 2022 and 2017	CF2200H09
H8a	Hazardous Material Shipment Characteristics by Truck for Intrastate Versus Interstate for Selected UN/NA Numbers for the United States: 2022	CF2200H11
H8b	Hazardous Material Shipment Characteristics by Rail for Intrastate Versus Interstate for Selected UN/NA Numbers for the United States: 2022	CF2200H12
H8c	Hazardous Material Shipment Characteristics by Water for Intrastate Versus Interstate for Selected UN/NA Numbers for the United States: 2022	CF2200H12
H8d	Hazardous Material Shipment Characteristics by Pipeline for Intrastate Versus Interstate for Selected UN/NA Numbers for the United States: 2022	CF2200H12
H8e	Hazardous Material Shipment Characteristics by Truck-Rail for Intrastate Versus Interstate for Selected UN/NA Numbers for the United States: 2022	CF2200H12
H9	Hazardous Material Shipment Characteristics for Toxic by Inhalation (TIH) for the United States: 2022	CF2200H13
H10	Hazardous Material Shipment Characteristics for Packaging Group I for the United States: 2022	CF2200H14
H11a	Hazardous Material Shipment Characteristics for Export by Destination: 2022	CF2200H15
H11b	Hazardous Material Shipment Characteristics for Export by Destination: 2022 and 2017	CF2200H15
H12	Hazardous Material Shipment Characteristics by Selected NAICS Code and Mode of Transportation for the United States: 2022	CF2200H16
H13	Hazardous Material Shipment Characteristics of Temperature Controlled Shipments by Mode of Transportation for the United States: 2022	CF2200H17
H14	Hazardous Material Shipment Characteristics of Temperature Controlled Shipments by Selected UN/NA Numbers for the United States: 2022	CF2200H18
H15	Hazardous Material Shipment Characteristics by Origin State: 2022	CF2200H05
H16	Hazardous Material Shipment Characteristics by Destination State: 2022	CF2200H06
B-A1a	Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation for the United States: 2022	CF2200A01
B-A1b	Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation for the United States: 2022 and 2017	CF2200A01
B-A2a	Estimated Measures of Reliability for Shipment Characteristics by Distance Shipped for the United States: 2022	CF2200A02
B-A2b	Estimated Measures of Reliability for Shipment Characteristics by Distance Shipped for the United States: 2022 and 2017	CF2200A02
B-A3a	Estimated Measures of Reliability for Shipment Characteristics by Shipment Weight for the United States: 2022	CF2200A03
B-A3b	Estimated Measures of Reliability for Shipment Characteristics by Shipment Weight for the United States: 2022 and 2017	CF2200A03
B-A4a	Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity for the United States: 2022	CF2200A05
B-A4b	Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity for the United States: 2022 and 2017	CF2200A05
B-A5	Estimated Measures of Reliability for Shipment Characteristics by Three-Digit Commodity for the United States: 2022	CF2200A05

Publication table	Publication table title	data.census.gov table
B-A6a	Estimated Coefficients of Variation for Shipment Characteristics by NAICS for the United States: 2022	CF2200A04
B-A6b	Estimated Measures of Reliability for Shipment Characteristics by NAICS for the United States: 2022 and 2017	CF2200A04
B-A7	Estimated Coefficients of Variation for Shipment Characteristics by Origin State: 2022	CF2200A16
B-A8	Estimated Coefficients of Variation for Shipment Characteristics by Destination State: 2022	CF2200A16
B-T1a	Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled Shipments by Mode of Transportation for the United States: 2022	CF2200TC01
B-T1b	Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled Shipments by Mode of Transportation for the United States: 2022 and 2017	CF2200TC01
B-T2a	Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled Shipments by Distance Shipped for the United States: 2022	CF2200TC02
B-T2b	Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled Shipments by Distance Shipped for the United States: 2022 and 2017	CF2200TC02
B-T3a	Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled Shipments by Shipment Weight for the United States: 2022	CF2200TC03
B-T3b	Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled Shipments by Shipment Weight for the United States: 2022 and 2017	CF2200TC03
B-T4a	Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled Shipments by Two-Digit Commodity for the United States: 2022	CF2200TC05
B-T4b	Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled Shipments by Two-Digit Commodity for the United States: 2022 and 2017	CF2200TC05
B-T5	Estimated Measures of Reliability for Shipment Characteristics of Temperature Controlled Shipments by Three-Digit Commodity for the United States: 2022	CF2200TC05
B-T6a	Estimated Coefficients of Variation for Shipment Characteristics of Temperature Controlled Shipments by NAICS for the United States: 2022	CF2200TC04
B-T6b	Estimated Coefficients of Variation for Shipment Characteristics of Temperature Controlled Shipments by NAICS for the United States: 2022 and 2017	CF2200TC04
B-T7	Estimated Coefficients of Variation for Shipment Characteristics of Temperature Controlled Shipments by Origin State for the United States: 2022	CF2200TC12
B-T8	Estimated Coefficients of Variation for Shipment Characteristics of Temperature Controlled Shipments by Destination State for the United States: 2022	CF2200TC13
B-E1a	Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation: 2022	CF2200E1
B-E1b	Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation: 2022 and 2017	CF2200E1
B-E2a	Estimated Measures of Reliability for Export Shipment Characteristics by Domestic Mode of Transportation: 2022	CF2200E2
B-E2b	Estimated Measures of Reliability for Export Shipment Characteristics by Domestic Mode of Transportation: 2022 and 2017	CF2200E2
B-E3	Estimated Measures of Reliability for Export Shipment Characteristics by Selected Domestic Mode Share: 2022	CF2200E8
B-E4a	Estimated Measures of Reliability for Export Shipment Characteristics by Destination: 2022	CF2200E3
B-E4b	Estimated Measures of Reliability for Export Shipment Characteristics by Destination: 2022 and 2017	CF2200E3
B-E5a	Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation and Destination: 2022	CF2200E4
B-E5b	Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation and Destination: 2022 and 2017	CF2200E4
B-E6a	Estimated Measures of Reliability for Export Shipment Characteristics by Two-Digit Commodity: 2022	CF2200E5
B-E6b	Estimated Measures of Reliability for Export Shipment Characteristics by Two-Digit Commodity: 2022 and 2017	CF2200E5
B-E7	Estimated Measures of Reliability for Export Shipment Characteristics by NAICS: 2022	CF2200E7
B-E8	Estimated Measures of Reliability for Export Shipment Characteristics by Origin State: 2022	CF2200E6
B-H1a	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022	CF2200H01
B-H1b	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022 and 2017	CF2200H01
B-H2a	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Hazard Class for the United States: 2022	CF2200H02

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Reference List: 2022 CFS Publication Tables to Data.census.gov Tables—Con.

Publication table	Publication table title	data.census.gov table
B-H2b	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Hazard Class for the United States: 2022 and 2017	CF2200H02
B-H3	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Hazard Division for the United States: 2022	CF2200H02
B-H4	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for the Selected UN/NA Numbers for the United States: 2022	CF2200H03
B-H5	Estimated Measures of Reliability for Hazardous Versus Nonhazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2022	CF2200H04
B-H6	Estimated Measures of Reliability for Shipment Characteristics by Selected Commodities for Hazardous Materials for the United States: 2022	CF2200H08
B-H7a	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Selected Commodities for the United States: 2022	CF2200H09
B-H7b	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Selected Commodities for the United States: 2022 and 2017	CF2200H09
B-H8a	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Truck for Intrastate Versus Interstate for Selected UN/NA Numbers for the United States: 2022	CF2200H11
B-H8b	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Rail for Intrastate Versus Interstate for Selected UN/NA Numbers for the United States: 2022	CF2200H12
B-H8c	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Water for Intrastate Versus Interstate for Selected UN/NA Numbers for the United States: 2022	CF2200H12
B-H8d	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Pipeline for Intrastate Versus Interstate for Selected UN/NA Numbers for the United States: 2022	CF2200H12
B-H8e	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Truck-Rail for Intrastate Versus Interstate for Selected UN/NA Numbers for the United States: 2022	CF2200H12
B-H9	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for Toxic by Inhalation (TIH) for the United States: 2022	CF2200H13
B-H10	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for Packaging Group I for the United States: 2022	CF2200H14
B-H11a	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for Export by Destination: 2022	CF2200H15
B-H11b	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics for Export by Destination: 2022 and 2017	CF2200H15
B-H12	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Selected NAICS Code and Mode of Transportation for the United States: 2022	CF2200H16
B-H13	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics of Temperature Controlled Shipments by Mode of Transportation for the United States: 2022	CF2200H17
B-H14	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics of Temperature Controlled Shipments by Selected UN/NA Numbers for the United States: 2022	CF2200H18
B-H15	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Origin State: 2022	CF2200H05
B-H16	Estimated Measures of Reliability for Hazardous Material Shipment Characteristics by Destination State: 2022	CF2200H06